# A Complete Bibliography of Publications of Claude Elwood Shannon

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**Abstract**

This bibliography records publications of Claude Elwood Shannon (1916–2001).

## Title word cross-reference

**$27** [Sil18]. **$4.00** [Mur57]. $7 \times 10$ [Mur57]. $H'$ [Siq98]. $n$ [Sha55d, Sha93-45]. $P/N \to \infty$ [Sha48j]. $s$ [Sha55d, Sha93-45].

**1939** [Sha93v]. **1950** [Ano53]. **1955** [MMS06]. **1982** [TWA+87].

**2001** [Bau01, Gal03, Jam09, Pin01]. **2D** [ZBM11].

**3** [Cer17].

**6G** [SB21].

**978** [Cer17]. **978-1-4767-6668-3** [Cer17].

**=** [Int03].

**Aberdeen** [FS43]. **ablation** [GKL+13]. **above** [TT12]. **absolute** [Ric03]. **Abstract** [Sha55c]. **abundance** [Gor06]. **abundances** [Ric03]. **Academics** [Pin01]. **According** [Sav64]. **account** [RAL+08]. **accuracy** [SGB02]. **activation** [GKL+13]. **Active** [LB08]. **actress** [Kah84]. **Actually** [Sha53f]. **Advanced** [Mar93]. **Affecting** [Nyq24]. **After** [Bot88, Sav11]. **After-Shannon** [Bot88]. **Age** [ACK+01, Cou01, Ger12, Nah13, SG17, Sha02, Wal01b, Sil18, Cer17]. **A'h** [New56]. **A'h-mose** [New56]. **Aid** [Bro11, Sha78, Sha93y, SM53]. **Albert** [New56]. **alcohol** [SBS+13]. **Algebra** [Roc99, Sha40c, Sha93a, Jan14]. **algorithm** [Cha72, HDC96, LM03]. **alignments** [CFRC04]. **Allied** [Kah84]. **alpha** [BSWCM14]. **alpha-Shannon** [BSWCM14]. **Alphabets** [GV15]. **Alternate** [Sha44e]. **Ambiguity** [Loe59, PGM+12]. **America** [FB69]. **American** [Ger12, Sha78]. **among** [AALR09, Di 00]. **Amplitude** [Sha54a]. **Analogue** [Sha43a, Sha93b]. **analogues** [Gor06]. **analyses** [SBS+13]. **Analysis** [Sha37, Sha38, Sha93-51, Sha21, GB00, RAL+07, SGB02, TKL+12, dTS+03]. **analyze** [HGR+12]. **Analyzer** [MS53a, MS53b, MS93c, Sha93-27, Sha41d, FS43]. **Anecdotes** [TWA+87]. **angular** [CS09]. **Animal** [Sha49d, Sha93-41]. **Apparatus** [Sha51b]. **Apple** [Cas16]. **Applicability** [Tim02]. **Application** [AALR09, JAS89, Sha48h, TWA+87, WVB10, FCW+00, POA+08, Rif85, SSAK06]. **Applications** [Fel66, Fel71, Fel09]. **Applied** [BLR+02, BLR+01, MBD+03, dTS+03]. **Applying** [ABS+13]. **Approach** [Sha48j, Sha55c, Sha93-38, BB88, LR05, Pri84, Pri85, RS06, Rog94, Wri67]. **approximation** [Koc05]. **April** [Gal03, Jam09]. **aqueous** [SGB02]. **Archimedes** [Pic08]. **architectural** [SBS+13]. **area** [JSMS12]. **aromaticity** [NS10]. **Articulation** [Lei07]. **artificial** [MMS06]. **Aspects** [Sha80, Sha93-44]. **assemblages** [Siq98]. **assess** [RFME+12]. **assessment** [BQhH08, JSMS12]. **Associative** [Bot88]. **asynchronisms** [RAL+07]. **atomic** [AALR09, GFD03, SK04]. **atoms** [Liu07, Sen05]. **Atrial** [LMC11, GKL+13]. **attack** [HN09]. **August** [MMS06]. **Austria** [Van89]. **authors** [Ano17a]. **Automata** [SM56, SM74, Sha93m, Sha93-60, SW93a, Sha53c, Sha58c, Mur57]. **Automaten** [SM74]. **Automatic** [Min95]. **Automation** [Min95, Sha63a, Sha93n]. **avoided** [GFD03]. **award** [Han10, Ano40b, Bar01, Kha16]. **Awards** [Pin01].

**B** [HGR+12, SW93h]. **backgrounds** [WMS+12]. **Backlash** [Sha41a, Sha93c]. **bacterial** [ABS+13]. **Ballistic** [FS43]. **Band** [Sha54a]. **Bandwagon** [Sha56a, Sha93d]. **Bandwidth** [Sha44d]. **basada** [Pla06]. **base** [JGH00].

**Based** [FM99, APMS+12, BQhH08, CFRC04, HSBJ02, Koc05, LM03, MBD+03, NS12, WGB09, WBB+12]. **Bayes** [APMS+12, AES17]. **Be** [Far03, Far02]. **Beautiful** [Far03, Far02]. **before** [Min02]. **Behavior** [DS46, DS93]. **behind** [Pic08]. **Beings** [Szi64]. **Bell** [Ger12, Min95]. **bellied** [dPV00]. **Berechnung** [Sha57b]. **Berkeley** [Sug13]. **Best** [Sha44a, Sha93e]. **beta** [MHBL12]. **Betting** [Sha56d]. **Between** [Min02, Kah84, Liu07, RS06, Sen21, Zha09]. **Beyond** [SB21, LP12]. **biases** [Zee02]. **Bihar** [JAS89]. **Binaire** [Loe59]. **Binary** [Bar01, Loe59, Sha54b, Sha93q, SGB02]. **Biodiversidad** [Pla06]. **Biodiversity** [Pla06]. **biographical** [Rog94]. **Biographies** [Cor87, Wei88]. **Biological** [HWO90, Ric03]. **biologist** [Sch06]. **biology** [Sch06]. **biomarkers** [APMS+12]. **Biopolitics** [Roc99]. **Bipolar** [GKL+13]. **bit** [Ale03, Ano01b]. **bold** [FFF09]. **bone** [RAL+08]. **Book** [Cer17, Mur57, Roc11, Tra10]. **Boole** [Nah13]. **Boolean** [Jan14]. **Bounds** [Mar08, Sha54a, Sha93w, Sha93x, SGB67a, SGB67b]. **box** [LM03]. **box-counting-based** [LM03]. **brave** [FFF09]. **breaking** [Eme01]. **Breed** [Bar01]. **Bridging** [RS06]. **brief** [Cro01]. **Building** [Hag79]. **Builds** [Bar01]. **Bush** [Sha93v, Sha39].

**C** [Mur57, Sug13, Wal01a, SW93i]. **Calcul** [Loe59]. **calculation** [Sha57b, Loe59]. **Calculations** [HWO90, SGB02]. **Calculator** [Sha93-42]. **calvarial** [RAL+08]. **cancer** [APMS+12]. **Candidates** [Pin01]. **Capacity** [BSWCM14, Bot88, GV15, Mar08, Sha56g, Sha56i, Sha57c, Sha93-47, Sha93-61, Sch06, Sha57b, SJ04, TT12]. **Capazität** [Sha57b]. **Case** [Hag79, Sha48a]. **cases** [Key05]. **Cathode** [PST48]. **Cathode-Ray** [PST48]. **caused** [SBS+13]. **Celebrating** [Zac16]. **cellular** [RFME+12]. **Century** [Sha93n, WL85, Sha63a]. **Certain** [Nyq24, Nyq28, Sha48f, Sha57a, Sha93f]. **chain** [Koc05]. **chain-based** [Koc05]. **chains** [ZBM11]. **Channel** [Sha48a, Sha56c, Sha56g, Sha56i, Sha57c, Sha93-36, Sha93-47, Sha93-61, Sch06, Sha57b, Sha59c]. **Channels** [Sha58a, Sha93f, Sha93g, Sha93w, Sha93x, Sha93-32, Sha93-57, POA+08, Sha57a, Sha58b, Sha61, SGB67a, SGB67b, TT12]. **Chaos** [Sch91]. **Characteristic** [Sen05]. **characterizing** [JGH00]. **checking** [FM99]. **chemical** [SSAK06]. **Chess** [Sha50b, Sha93h, Wha78, Lev88, Sha50g, Sha93-37]. **Chess-Playing** [Sha50b, Sha93h]. **China** [BQhH08]. **cipher** [AMS+10, HN09]. **Circuit** [GBR07, HS46, MS53a, MS53b, MS53c, MS93c, MS93d, Sha53j, Sha93y, SM53]. **Circuits** [FM99, MS54, MS93a, MS93b, OS44, OS93, Sha37, Sha38, Sha41b, Sha44e, Sha49f, Sha55e, Sha93-51, Sha93-48, Sha93-53, Sha21, SW93d, Jan14, MS56a, MS56b]. **Classic** [Lew21]. **classical** [SS07]. **classification** [APMS+12]. **Claude** [Ano01c, Cer17, Sil18, TWA+87, Ano40a, Ano40b, Ano00, Ano01a, Ano01b, Ano02, Bar01, Bau01, Bro11, CS01, CLM+01, Cou01, Ell84, Eme01, Eph01, Gag98, Gal01, Gal03, Gol01, GBC+02, Gui03, Han10, Hor90, Hor92, Hor11,

Jam09, Joh01, Kha16, Lew01, Nah13, NWV94, O'R12, Pin01, Pri82, Pri84, Pri85, Roc10, Roc11, RHQ+16, Sch06, Sha82a, Sha02, Sha14, Sla97, SW93k, SW93l, SW93b, SG17, SF03, SK01, Str14, Van89, Wal01b, Zac16]. **Closing** [Gui04]. **Closure** [Sha44c]. **Clustering** [DGH+06]. **coasts** [YLR+10]. **Cobol** [Bar01]. **Code** [Loe59, OS46, Sha43b, Gui04, Wri67]. **Codes** [Sha93-36, Gui04, Sha59c]. **Coding** [Bot88, Gol49, Sha40a, Sha48a, Sha53d, Sha54b, Sha55c, Sha59a, Sha59b, Sha60, Sha93f, Sha93i, Sha93q, Sha93s, Sha93w, Sha93x, Sha93-38, TWA+87, Sha57a, SGB67a, SGB67b, WMS+12, Zee02]. **codon** [FMSS03, Zee02]. **coherence** [LMC11, YN11]. **coherent** [RM06, YN11]. **cold** [Sen21]. **collected** [SW93k]. **Collection** [Bro11]. **Colleges** [HS54, HS93]. **colon** [APMS+12]. **Color** [Sha40a]. **Coloring** [Sha93-54, Sha49g]. **Combining** [Gor06]. **Communication** [Hag79, OS46, Sha48b, Sha48c, Sha48h, Sha49a, Sha49b, SW49, Sha49d, Sha50f, Sha50i, Sha53a, Sha53b, SW63, SW71, SW76, SW83, Sha84a, Sha84b, Sha85, Sha93j, Sha93k, Sha93l, Sha93z, Sha93-32, Sha93-41, Sha93-40, Sha93-57, Sha97, Sha98b, Sha98a, SW98, Sha01, SW93c, Wea49, Wea53, Lyn77, Rog94, Sha58b, Sha61, SW64, SW69, SW72, SW75b, SW75a, SW78, SW81, Sla97, TT12, Yoc00, dPV00, Doo49]. **Communications** [Ano01c, Ano01b, Kah84, SB21]. **Comparison** [GWZC12]. **comparisons** [AALR09]. **compendium** [Lev88]. **complete** [CHC+04, CHC+05]. **complex** [RFME+12, SSAK06]. **complexity** [LR05, SBS+13]. **component** [TKL+12]. **Components** [Sha56f]. **Compound** [WVB10]. **compounds** [SGB02]. **Computability** [dLMSS54, dLMSS56, dLMSS93]. **Computable** [HSS23]. **Computation** [Bar01, Sha50j, Sha93-42, Ric03, Zee02]. **Computer** [Lap96, Lev88, Lew21, Wha78, Bro00a, Sha50g, Sha93-37, Smi05, WL85, Pin01, Sha50j]. **Computers** [Sha53c, Sha53h, Sha63a, Sha93m, Sha93n, Sha93-33, SW93d, Sug13]. **Computing** [Bul15, DM15, Sha85, Wal01a, LM03, Min02]. **comunicación** [SW81]. **comunicazioni** [SW71, SW83]. **Concavity** [Sha55b, SH56, Sha93o, Sha93p]. **concept** [GB00]. **Concepts** [Som09]. **conceptual** [Ell09, Tim03]. **Conceptualization** [Asp85]. **concerning** [Tho09]. **confidence** [MHBL12]. **confidentiality** [Gag98]. **configuration** [WBB+12]. **confined** [Sen05]. **Congress** [Bro11]. **Connected** [DS46, DS93, Sha07]. **Connection** [Pin01]. **Connections** [AES17]. **connectivity** [RFME+12]. **conservation** [BQhH08]. **Consistency** [Sha41b]. **Contacts** [Sha53i, Sha93-39]. **Content** [WVB10, Rif85]. **context** [CLM+01]. **continued** [Sha48c]. **Continuous** [Sha43a, Sha93b]. **contribution** [RHQ+16]. **Contributions** [Sha93-60, Wea53, Sha58c]. **Control** [BBS46, Min95, Sha49d, Sha51b, Sha93-41, Min02]. **Controversies** [Bar01]. **Convergence** [GV15]. **conversation** [Ell84, Pri84, Pri85]. **Corporation** [Pin01]. **correcting** [Wri67]. **correlation** [RD04]. **cost** [Kra21]. **Counters** [Sha44b]. **Counting** [Ell09, Kör96, Sha44b, Sha44e, Koc05, LM03]. **Created** [Lew21, Nah13]. **Creative** [Sha52a]. **Criteria** [Sha41b]. **Criterion**

[Sha59b, Sha93i, Sha60]. **critical** [ZBM11]. **Crossbar** [HS46]. **crossings** [GFD03]. **Crossword** [Efr08]. **Crummy** [MS54]. **Cryptography** [Roc99, Sha45a, SW93c, BB88]. **Cryptology** [Kah84, Roc99]. **crystalline** [SBS+13]. **CSIDC** [Pin01]. **Cubic** [BERS86]. **Cubics** [Sha82b]. **Cybernetics** [DL63, Sha49d, Sha68a, Min02, Sha93-41].

**Dartmouth** [MMS06]. **Data** [BSWCM14, BBS46, Cor87, Sha41c, WVB10, Bla65, LCW+16, LHA+16]. **data-smoothing** [Bla65]. **database** [GB01]. **Datalog** [KNS17]. **Daubechies** [JZL98]. **Days** [Bul15]. **Decomposition** [GBR07, LB08, MHBL12]. **Decrease** [Szi64]. **deep** [HGR+12]. **Deflection** [Sha41f, Sha41e, Sha93-50, Sha93-46]. **degree** [ABS11, YN11]. **Delay** [Sha56c]. **Delsarte** [AL07]. **demon** [Kra21]. **Demonstrates** [Sha14]. **demonstrating** [LHA+16]. **Demonstration** [Sha14]. **densities** [AALR09, Liu07]. **Dependent** [WVB10]. **Derivation** [BS50, BS93]. **Derivatives** [Sha54a]. **Description** [Sha50j, Sha93-42]. **Descriptor** [WVB10, GB00]. **descriptors** [GB01, GPM06, SGB02]. **Desflurane** [BLR+02, BLR+01]. **Design** [FM99, Sha42, Sha93y, Sha93-55, SM53]. **Detection** [Sha44a, Sha93e, HSBJ02, HTR+08, LMC11]. **detectors** [WBB+12]. **detects** [CFRC04]. **Determinate** [Sha45b]. **determined** [YLR+10]. **Deutung** [Sha57b]. **developed** [Kah84]. **Development** [Sha85, Sle74]. **Developments** [Sha50f, Sha50i, Sha93-40]. **Device** [PST48]. **diagnosis** [TKL+12]. **diagnostic** [Rif85]. **diatom** [Siq98]. **Dictionary** [Cor87]. **Dies** [Ano01a, Bar01, Joh01, Ano01c]. **difference** [Sen21]. **differences** [GB01]. **Differential** [GB01, Sha41g, Sha42, Sha93-27, Sha93-55, SGB02, Sha41d]. **Difficulty** [Efr08]. **diffusion** [LS10]. **Digital** [ACK+01, Ano01c, Bul15, CK19, Cou01, Gol49, LP12, Sha50c, Ano01b, Cer17, Eme01, HDC96, Cas16, Wal01b]. **dimension** [RAL+08, SBS+13]. **Dimensional** [Sha78, GWZC12, SJ04]. **dimensionality** [CS09, POA+08]. **Diorama** [Sha82a, SW93b]. **Director** [Zor89, Pin01]. **Director-Elect** [Pin01]. **discipline** [Mat94]. **Discrete** [Sha48g, Sha59a, Sha59b, Sha93i, Sha93w, Sha93x, Sha60, SGB67a, SGB67b]. **Discussion** [CMU+53, CMU+93]. **Disjunctive** [KNS17]. **distinctions** [Ell09]. **distinguish** [WMS+12]. **distinguisher** [AMS+10]. **distinguishing** [HN09]. **Distortion** [Sha59a]. **distribution** [Di 00, NS12]. **Distributions** [WVB10, AALR09, GPM06]. **Divergence** [CCHL05, MPPP97]. **divergences** [AALR09]. **diversity** [BQhH08, BKU+94, De'12, Di 00, GB00, Gor06, ID00, Key05, MHBL12, Ric03, RS06, Siq98, SF03]. **Division** [Pin01]. **Djingis** [NWV94]. **DNA** [Bar01, Zha09]. **Do** [KNS17, dR55]. **Doppler** [HTR+08]. **Down** [Sha44b]. **Dr.** [Bre63]. **Dream** [Wal01a]. **Dretske** [Lom05]. **Driver** [Sha78]. **Drop** [Sha82a, SW93b]. **drug** [FCW+00]. **during** [Kah84, RAL+08]. **dynamical** [RAL+07]. **dynamics** [Let06, LM03].

**E100** [LS35]. **E58** [SSS34]. **Early** [Bul15, CK19, Sha14]. **earth** [Yoc00]. **eco**

[RHQ+16]. **eco-evolutionary** [RHQ+16]. **Economic** [BQhH08]. **edited** [Mur57]. **Editorial** [Sha56a, Sha84b]. **Edmund** [Sug13]. **Education** [Hig63]. **educator** [Sug13]. **EEG** [BLR+02]. **effect** [HGR+12]. **effectiveness** [Jan14]. **Effects** [BLR+02, BLR+01]. **Efficient** [Sha48a, Sha54b, Sha93q]. **einem** [Szi29]. **Eingriffen** [Szi29]. **einiger** [Sha57b]. **Einstein** [Ano00, Kov20, New56, Per05, Sen21]. **Elect** [Pin01]. **electric** [GFD03]. **Electrical** [Ano40b, MS53a, WL85]. **electroencephalographic** [BLR+01]. **electrogram** [GKL+13]. **electron** [GWZC12, RD04]. **Electronic** [Sha46]. **element** [BKU+94]. **Elementary** [LS35, SSS34]. **eleven** [Sha07]. **Elwood** [Bau01, Bro11, Gal03, GBC+02, Jam09, SW93k, SW93l]. **EMC** [Pin01]. **Employing** [OS46]. **enabled** [WMS+12]. **Encounter** [Kov20]. **encryption** [Gag98]. **engineer** [Nah13]. **Engineering** [Cer88, Hag79, FFF09, Smi05, WL85]. **Engineers** [Ano40b, Kah84, Tra10, Jam10]. **England** [Sha78]. **English** [Sha51a, Sha93-34]. **Enigma** [Ano16, LHA+16]. **Ensembles** [Sha48e]. **entanglement** [POA+08, ZBM11]. **entropic** [NS12]. **entropies** [APMS+12, GWZC12, LR05, WMS+12, ZBM11]. **Entropieverminderung** [Szi29]. **Entropy** [BLR+02, GB01, GV15, HGR+12, JSMS12, LMC11, PGM+12, RFME+12, Sav64, Sha51a, Sha93-34, Szi64, WVB10, ABS11, BLR+01, CFRC04, FMSS03, FCW+00, GKL+13, GB00, GFD03, GPM06, HTR+08, Key05, Koc05, Let06, Liu07, LM03, MHBL12, Mat94, NS12, NS10, PP06, RAL+07, RM06, Ric03, RS06, RAL+08, SSK+05, Sen05, SK04, SS07, SBS+13, SGB02, SD96, Szi29, Szi76, TKL+12, WGB09, YN11, Zha09, dPV00, dTS+03]. **entropy-based** [CFRC04, WGB09]. **Entropy-TOPSIS** [JSMS12]. **Entstehung** [Hag79]. **Environmental** [YLR+10, JSMS12]. **Equation** [Sha42, Sha93-55]. **Equations** [Far03, FS43, Ale03, Far02]. **erasure** [Kra21]. **Ergebnisse** [Sha57b]. **Ergodic** [Sha48e]. **Error** [Sha56c, Sha56i, Sha93w, Sha93x, Sha93-36, Sha93-61, Sha59c, SGB67a, SGB67b, Wri67]. **error-correcting** [Wri67]. **Errors** [Mar08]. **essential** [Gui03]. **Estimates** [Sav64]. **Estimating** [Let06]. **Estimation** [BSWCM14]. **Europe** [FB69]. **evenness** [YLR+10]. **event** [dTS+03]. **event-related** [dTS+03]. **evidence** [Tho09]. **evolution** [HGR+12]. **evolutionary** [RHQ+16]. **Exact** [Cro63]. **Exam** [NWV94]. **Exchange** [Sha50d, Sha93-28]. **expected** [ABS11]. **experiment** [YN11]. **Experimental** [LCW+16, Sha41e, Sha93-46]. **Experimentally** [LHA+16]. **Expert** [Bar01, NWV94]. **explains** [Sen21]. **Explicit** [Sha53f]. **Exploring** [CK19, RHQ+16]. **Exposition** [Sha53a, Sha53b, Sha93k]. **expression** [SGG04]. **extension** [BB88].

**Factors** [Nyq24]. **Factory** [Ger12]. **Fair** [Pin01]. **Fallstudie** [Hag79]. **Fast** [GV15]. **Father** [Ano98, Ano01a, Hor90, Sha02, Wal01b, Hor11]. **fear** [NWV94]. **feature** [GPM06]. **features** [SSK+05, Sen05]. **February** [Gal03, Jam09, Sha93v]. **Feedback** [Sha44c, Min02]. **female** [Di 00]. **Fibrillation** [LMC11, GKL+13]. **Fidelity** [Sha59b, Sha93i, Sha60]. **fields**

[GFD03, dR55]. **Fifty** [Ver98]. **filter** [CFRC04]. **Finders** [Sha41f, Sha93-50]. **Finding** [Bro11]. **Finds** [Bar01]. **Fine** [LB08]. **Fine-grained** [LB08]. **Finest** [Min95]. **fingerprint** [WGB09]. **Finite** [SK04, YCS12]. **Fire** [BBS46]. **Fire-Control** [BBS46]. **First** [Bre63, Hor11, Ric03]. **Fisher** [AALR09, AES17, HTR+08, Liu07, RD04, YCS12]. **Flaw** [Bar01]. **Flow** [EFS56, EFS93, CSJJ10]. **flowmetry** [HTR+08]. **fluctuations** [RM06]. **fMRI** [dTS+03]. **foray** [Cro01]. **Forecaster** [Sha56e]. **forest** [BQhH08]. **Formal** [Som09]. **Formula** [BSWCM14, Sha50h]. **formulate** [Sch06]. **Foundational** [Tim02]. **foundations** [Ano01b, Ell09]. **Founder** [Ano01c, Sch06]. **Four** [DS46, DS93]. **Four-Terminal** [DS46, DS93]. **Fourier** [JGH00]. **Fourth** [Sha78]. **Fourth-Dimensional** [Sha78]. **Fractal** [SBS+13, RAL+08]. **Fractals** [Sch91]. **fractional** [CS09]. **Framework** [All04]. **free** [SS07]. **French** [Loe59, SW75a]. **Frequencies** [PGM+12]. **Fresnel** [LP12]. **fridge** [Sen21]. **Frontiers** [SG18]. **Frontmatter** [SW93e]. **Function** [Sha55b, Sha93p, LMC11]. **Functional** [FM99]. **Functions** [Sha48e, Sha53i, Sha55d, SH56, Sha93o, Sha93-39, Sha93-45]. **Fundamentals** [Sha53a, Sha53b, Sha93k]. **Funding** [Pin01]. **Future** [Lew21].

**Game** [Sha55a, Sha93r]. **Games** [SW93d, Cha72]. **Ganga** [JAS89]. **gap** [RS06]. **Gating** [LB08]. **Gaussian** [Koc05, RM06, Sha59c, Sha93-36]. **Gaylord** [Ano34, Ano98, Ano00]. **geheime** [Roc10, Roc11]. **Gene** [DGH+06, MBD+03, SGG04]. **General** [Cro63, Sha53d, Sha93s, Som09, NS12]. **Generalization** [BB88]. **Generalizations** [Sha48i]. **generalized** [Key05]. **generation** [Lyn77]. **genes** [JGH00]. **genesis** [CLM+01, Tho09]. **Genetics** [Sha40c, Sha93a, SW93f, Cro01]. **Genghis** [NWV94]. **Genius** [Cou01, Int03, Ano01b, Cer17]. **genome** [Zha09]. **genomes** [ABS+13, CHC+04, CHC+05, CCHL05, JGH00, Zee02]. **Geometrical** [Sha56g, Sha57c, Sha93-47, Sha57b]. **Geometrische** [Sha57b]. **George** [Nah13]. **German** [Bau01, Hag79, Roc10, Roc11, Sha50f, Sha57b, SM74, SW76, Szi29]. **Geschichte** [Roc10, Roc11]. **Gini** [AES17]. **Give** [Sha53f]. **Go** [Bar01]. **goal** [SB21]. **goal-oriented** [SB21]. **Goals** [Pin01]. **Goodman** [Cer17, Sil18, Doo18]. **grained** [LB08]. **Graph** [AL07, APMS+12, Cha72]. **graze** [dR55]. **Great** [Bel53, DM15, Far03, Ger12, Lap96, Far02, Pic08]. **grooming** [Di 00]. **ground** [Eme01]. **ground-breaking** [Eme01]. **Grundlagen** [SW76]. **guarantee** [Kah84]. **Gun** [Zor89]. **Gunfire** [BBS46].

**Hanoi** [Sha53l]. **Haplotype** [PGM+12]. **Harvard** [Sha50j, Sha93-42]. **Hawking** [Pic08]. **hazards** [AES17]. **healthy** [HTR+08]. **heat** [Kra21]. **Hedy** [Kah84]. **Height** [Sha41c]. **Helleh** [JSMS12]. **Hellman** [BB88]. **hepatitis** [HGR+12]. **heterogeneous** [ABS11]. **Hickman** [Sha40b, Sha93-59]. **High** [Pin01, CFRC04, HTR+08, Kra21, LS10, SGB02]. **high-quality** [CFRC04]. **high-values** [HTR+08]. **highly** [SBS+13].

**Historical** [Cor87, Jan14]. **History** [Roc10, Roc11, FFF09, Rog94]. **Hla** [PGM+12]. **Hoffman** [AL07]. **holography** [LP12]. **Hometown** [Cer88]. **homologues** [CFRC04]. **Honored** [Ano40b]. **Honors** [Ano98, Cer88]. **Host** [RFME+12]. **hot** [Sen21]. **Hour** [Min95]. **human** [APMS+12, Min02, Zee02]. **hyperentanglement** [CS09]. **Hypergraph** [LB08]. **hypotheses** [Di 00].

**Idea** [Ger12]. **Ideal** [Sha48j, Sha55c, Sha55e, Sha93-38, Sha93-48]. **Ideas** [Lew21]. **identification** [FCW+00]. **identifies** [SGB02]. **IEEE** [Pin01]. **II** [Kah84, MS56b, MS93b, SGB67b, Sha93x, Wri67]. **illumination** [YN11]. **imaging** [SJ04, YN11]. **Impact** [Gal01, Gal06]. **implanted** [SBS+13]. **implemented** [Cha72]. **implications** [GKL+13, Lyn77]. **inadequacy** [Tim03]. **including** [Rif85]. **incontinence** [TKL+12]. **Increases** [Pin01]. **Increasing** [CS09]. **independent** [Rif85]. **Index** [JAS89, BQhH08, BKU+94, Di 00, Gor06, ID00, Key05, Lei07, Pla06, RS06, Siq98, SF03, WC99, Zha09]. **India** [JAS89]. **indicator** [GFD03]. **indice** [Pla06]. **indices** [Gor06]. **individual** [dPV00]. **induced** [SBS+13]. **Industrial** [Hag79]. **Industrie** [Hag79]. **Industrie-** [Hag79]. **Industry** [Cer88, RFME+12]. **Inequalities** [KNS17]. **Inequality** [GV15]. **Inference** [Pla06, Wri67]. **Inferencia** [Pla06]. **inflammatory** [SBS+13]. **Inform** [San05]. **informacii** [DL63]. **Information** [ACK+01, All04, Ano53, Ano98, Ano01a, Asp85, Bro00b, Cro63, DGH+06, DL63, Gal06, HWO90, Hor90, HSS23, Lom05, Roc10, Roc11, Sav11, Sha49c, Sha50c, Sha52b, Sha53e, Sha56b, Sha58a, Sha59a, Sha63b, Sha68b, Sha93g, Sha93t, Sha93u, Sha93-49, Sil18, SW93c, Som09, Str14, SG18, Tim02, WVB10, Zee02, ABS+13, Ale03, Cer17, CHC+04, CHC+05, CCHL05, CLM+01, Ell09, Eme01, GWZC12, Gui03, Hor11, HSBJ02, HTR+08, JGH00, Lei07, Liu07, LHV16, LR05, LS10, Lyn77, MBD+03, Nah13, Rif85, RD04, SSAK06, Sch06, Sen05, SK04, Sle74, SG17, SJ04, SD96, Tho09, Tim03, YCS12, Col93, Roc10, Sha56d, Sha02, Som09, Roc11]. **Informationskonzepten** [Hag79]. **Informationstheorie** [SW76]. **Infrequent** [Sha54b, Sha93q]. **Innovation** [Ger12]. **Input** [Sha55b, Sha93p]. **Institute** [Ano40a]. **Instructor** [Ano40b]. **integral** [SJ04]. **integrated** [JSMS12]. **Integration** [FS43, Sha50h]. **intellectual** [FB69]. **intelligence** [MMS06]. **Intelligent** [Szi64, Szi29, Szi76]. **intelligenter** [Szi29]. **interference** [Szi29, Szi76]. **Internal** [Sha54c, Sha93-58, Sha56h]. **International** [Pin01]. **interpolation** [Mar91, Mar93]. **Interpretation** [Lom05]. **interval** [MHBL12]. **Intervention** [Szi64]. **Interview** [Pri82, TWA+87, Van89]. **Introduction** [Fel66, Mar91, TWA+87, Fel71, Fel09]. **Intuitive** [Roc99]. **invasive** [TKL+12]. **Invented** [Sil18, Ano01b, Cer17, SG17]. **Invests** [Pin01]. **Involvement** [Pin01]. **Ioan** [Tra10]. **Iran** [JSMS12]. **Irving** [TWA+87]. **ISBN** [Cer17]. **Italian** [SW71, SW83]. **Iterative** [WVB10].

**J** [Mur57]. **J.** [Wal01a]. **James** [Tra10]. **Jensen** [AALR09, MPPP97]. **Jimmy** [Cer17, Doo18, Sil18]. **John** [UKTS68, UKTS69]. **Juggler** [Hor90].

**Juggling** [Sha80, Sha82a, Sha93-44, SW93b].

**Kanal** [Sha57b]. **Kelly** [Sha56d]. **Key** [Sle74]. **Khan** [NWV94]. **kibernetike** [DL63]. **Kiss** [Sha93-43, Sha49e]. **Koehler** [YN11]. **Kommunikation** [Sha50f]. **Korean** [YLR+10]. **Kriegsforschung** [Hag79]. **kth** [Koc05]. **kth-order** [Koc05].

**Laboratory** [HS54, HS93, Sha50j, Sha93-42]. **Labs** [Ger12, Min95]. **laid** [Ano01b, Eme01]. **Lakatos** [Sha40b, Sha93-59]. **Lamarr** [Kah84]. **L'Ambiguité** [Loe59]. **Language** [Sav64]. **Large** [DS46, DS93, Mar08]. **Large-scale** [Mar08]. **laser** [HTR+08]. **Lattice** [HSS23, Sha53e, Sha93u]. **Lattices** [Sha49e, Sha93-43]. **Laws** [Sch91, ID00, Pic08]. **leaders** [Kah84]. **Leap** [Ano16]. **Learning** [Hig63, Sha14]. **Least** [BS50, BS93]. **Leben** [Roc10, Roc11]. **lecture** [Han10, TWA+87]. **Lectures** [Hig63]. **Legal** [RFME+12]. **Legal-Social** [RFME+12]. **Less** [MS93a, MS93b, MS56a, MS56b]. **Letter** [Sha39, Sha93v, TWA+87]. **levels** [SGG04]. **library** [New56, Bro11]. **Licklider** [Wal01a]. **Life** [Gal01, Roc10, Roc11, Mat94, Yoc00]. **light** [RM06]. **Like** [Bot88]. **limit** [TT12]. **Limited** [Sha54a]. **limits** [LP12]. **line** [HTR+08]. **Linear** [Bla65, BS50, BS93, BERS86, DS46, DS93, Sha41g, Sha42, Sha93-55, HN09, TT12]. **Lines** [Sha93-54, Zac16, Sha49g]. **linking** [De'12]. **Linz** [Van89]. **literature** [Mat94, New56]. **LMC** [LR05]. **Locals** [Ano34]. **locking** [LCW+16, LHA+16]. **Logarithmic** [ZBM11]. **logic** [Sug13, Sha49e, Sha93-43]. **logician** [Nah13]. **London** [Ano53]. **Loop** [Sha44c]. **Low** [GBR07]. **Low-Power** [GBR07]. **Lower** [SGB67a, SGB67b, Sha93w, Sha93x]. **LTE** [BSWCM14].

**MAC** [Mar08]. **Machine** [Ano16, Sha50b, Sha51c, SM53, Sha53g, Sha93h, Sha93y, Sha93-30, Sha93-35, Sha93-58, Sha14, Wal01a, LHA+16, Min02, Sha56h, Sha49d, Sha54c, Sha93-41]. **Machines** [Bre63, Sha42, Sha56f, Sha93r, Sha93-55, dLMSS54, dLMSS93, Bro00a, Sha55a, dLMSS56]. **MADDIDA** [TWA+87]. **Made** [Wal01a, Eme01]. **magnetic** [GFD03]. **making** [Gui03]. **Man** [Bre63, Pri84, Pri85]. **Man-Machines** [Bre63]. **Mapping** [DGH+06, MBD+03]. **Maps** [Pin01]. **Marker** [DGH+06]. **Markhoff** [Sha48g]. **Markov** [RFME+12, Koc05, PP06]. **Markov-Shannon** [RFME+12]. **Mars** [Smi05]. **Martin** [ID00]. **master** [Eme01]. **Mastermind** [Str14]. **Masterpiece** [Hor11]. **matematica** [SW71, SW83, SW81]. **math** [Luc12]. **Mathematical** [Ano00, CLM+01, Doo49, Roc99, Sha41d, Sha45a, Sha48b, Sha48c, SW49, SW63, SW71, SW75a, SW76, SW83, Sha93z, Sha93-27, Sha97, SW98, Sha01, Wea53, Lyn77, SW64, SW69, SW72, SW75b, SW78, SW81]. **Mathematician** [Joh01]. **Mathematics** [Wea49, Jan14, New56]. **mathématique** [SW75a]. **Mathematische** [SW76]. **Mathematization** [Roc99]. **Mathmanship**

[Sha53f]. **matrix** [Gor06]. **Maximum** [EFS56, EFS93, Rif85]. **Maxwell** [Kra21]. **May** [Bre63]. **Maze** [Sha51c, Sha93-35]. **Maze-Solving** [Sha93-35]. **McCarthy** [Mur57]. **meaning** [Sha57b]. **Measure** [Bot88, Cro63, JAS89, PGM+12, Sha59a, GB01, ID00, Mat94, NS10, SSAK06]. **measured** [SSK+05]. **Measurement** [BLR+02, BLR+01]. **measures** [RS06]. **measuring** [dPV00]. **mechanical** [RAL+07]. **Mechanics** [Tim02, Tim03]. **Mechanism** [Sha41c, Sha41f, Sha41e, Sha93-50, Sha93-46]. **medical** [Rif85]. **medium** [Ano01b]. **Meet** [Ano17a]. **Meets** [Efr08, SG18, NWV94]. **Membership** [Pin01]. **Memory** [Bot88, Sha50d, Sha93-28]. **Memoryless** [Sha93w, Sha93x, SGB67a, SGB67b]. **message** [Ano01b, Gui03]. **metagenomes** [ABS+13]. **Method** [Cro63, Sha50c, Sha50e, Sha93-29, HSBJ02]. **Methodology** [WVB10, JSMS12]. **Methods** [Sha46]. **microspheres** [SBS+13]. **migration** [FB69]. **Military** [Hag79]. **Mind** [Ano17a, Doo18, Sha53g, Sha93-30, Cer17, SG17, Sil18]. **Mind-Reading** [Sha53g, Sha93-30]. **Minds** [Bro00a, Pic08]. **Minimize** [Sha44d]. **miscellaneous** [SW93l]. **Mixed** [Sha45b]. **Model** [Efr08, De'12]. **models** [PP06, RFME+12]. **Modern** [Far03, Far02]. **Modest** [Sha78]. **Modification** [WC99]. **Modified** [BSWCM14, YLR+10]. **Modulation** [OS46, Sha43b]. **module** [Jan14]. **Molecular** [HWO90, GB00, GB01, LM03, RFME+12, SGB02]. **molecules** [Liu07]. **momentum** [AALR09, CS09, GWZC12]. **monotonicity** [SS07]. **mose** [New56]. **möter** [NWV94]. **mouse** [Zee02]. **Moving** [Sha50e, Sha93-29]. **MRI** [LS10]. **much** [Eme01]. **multidimensional** [HN09]. **multinomial** [De'12]. **multiple** [De'12, Rif85]. **multiverse** [Bro00a]. **Must** [Far03, Far02]. **mutations** [HGR+12]. **Mutual** [DGH+06, HSBJ02, Lei07, MBD+03].

**Nachrichtentechnik** [Hag79]. **Naive** [APMS+12]. **Named** [Pin01]. **natural** [HGR+12]. **Network** [EFS56, EFS93, Sha48d, Sha93-31, Sha93-54, Sha49g]. **Networks** [DS46, DS93, RS93, ABS11, RFME+12, RS42, SB21]. **Neuentwicklungen** [Sha50f]. **Neumann** [ABS11, Sha58c, Sha93-60, TWA+87, UKTS68, UKTS69]. **Neural** [RFME+12, YCS12]. **News** [Bar01, Kra21]. **No** [Sha82a, SW93b]. **No-Drop** [Sha82a, SW93b]. **Noble** [Ano40b]. **Noise** [Bot88, Sha93j, Sha49a, Sha84a, Sha98b, Sha84b]. **Noise-Like** [Bot88]. **Noisy** [Sha48a, Sha56d, Sha56c, Sha56i, Sha93f, Sha93-61, Sha57a]. **Non** [TKL+12, Rif85, WMS+12]. **non-coding** [WMS+12]. **non-independent** [Rif85]. **Non-invasive** [TKL+12]. **nonequilibrium** [NS12]. **noninvasive** [RAL+07]. **Nonlinear** [TT12]. **Nonoverlapping** [Sha44d]. **nonuniform** [GWZC12]. **Norbert** [Sha49d, Sha93-41]. **Normal** [Sha48e]. **normality** [Siq98]. **Notation** [Sha50a, Sha93-52]. **Note** [EFS56, EFS93, Sha48f, Sha48g, Sha93-32, Sha58b, Sha84b]. **Notes** [Gol49, Sha56d, Sha56c, SW93g, SW93h, SW93i]. **novel** [GB00]. **Number** [DS46, DS93, RS93, RS42, SJ04]. **Numbers** [Sha48f, Sha50a, Sha93-52].

**Numerical** [YN11]. **Nyquist** [Ano17b, WBB+12].

**Obituary** [CS01]. **objective** [RAL+08]. **Observers** [Kov20]. **Obtaining** [Cro63]. **Oh** [Wei88]. **on-line** [HTR+08]. **One** [KNS17, Sha54b, Sha93q, GWZC12, Pri84, Pri85]. **one-dimensional** [GWZC12]. **onf** [Gal06]. **Online** [Bar01]. **Operation** [Sha53j]. **Operators** [Sha41g]. **opinion** [ID00]. **Optical** [CSJJ10]. **Optimal** [Sha93-36, Sha59c]. **Optimization** [WBB+12]. **orbital** [CS09]. **order** [Koc05, Zha09]. **Ordering** [Sha93-32, Sha58b]. **organization** [RAL+08]. **oriented** [SB21]. **Origin** [Yoc00]. **origins** [Kah84]. **Outfit** [HS54, HS93]. **Overdamped** [Sha41a, Sha93c].

**P.C.M.** [OS44, OS93]. **packets** [HSBJ02]. **Page** [Ano93]. **pages** [Mur57]. **Panel** [HS46]. **Papers** [Bro11, CMU+53, CMU+93, Lap96, Lew21, Sle74, SW93k, DL63]. **Parallel** [RS93, GFD03, RS42]. **Parametric** [Ric03]. **Parasite** [RFME+12]. **Parasite-Host** [RFME+12]. **Parkinson** [Zor89]. **Part** [SW93g, SW93h, SW93i]. **Partial** [Sha93-32, Sha58b]. **partially** [RM06, YN11]. **Partitioning** [LB08]. **pathway** [RFME+12]. **patient** [Gag98]. **Patna** [JAS89]. **Pay** [Sha56e]. **PCM** [OPS48, OPS93]. **Peak** [BSWCM14]. **Pedodiversity** [ID00]. **perfect** [Gui04]. **Periodic** [Sha44c]. **periodicity** [JGH00]. **Permissions** [SW93j]. **Personal** [Lew01, Wal01a]. **pg** [Koc05]. **phage** [ABS+13]. **Philosophy** [OPS48, OPS93]. **photon** [Koc05, POA+08]. **photon-counting** [Koc05]. **Pioneer** [Bar01]. **Pioneers** [Wei88]. **pixilated** [WBB+12]. **Plan** [Pin01]. **plane** [RD04]. **platforms** [BKU+94]. **Play** [Sil18, Cer17, SG17, Doo18, Ano17a]. **played** [Kah84]. **Playful** [Ano01b]. **Playing** [Sha50b, Sha93h, Sha93r, Sha50g, Sha55a, Sha93-37]. **plea** [SF03]. **Pleasures** [Kör96]. **plots** [Let06, RAL+07]. **Podolsky** [Per05]. **Poetic** [Hor11]. **points** [JZL98, ZBM11]. **polarized** [RM06]. **Pollution** [JAS89]. **poly** [SBS+13]. **Polynomially** [GV15]. **popularizer** [Sug13]. **Population** [PGM+12, MBD+03]. **population-based** [MBD+03]. **populations** [YCS12]. **Portfolio** [Sha56e]. **position** [AALR09, GWZC12]. **possible** [Eme01]. **Potential** [Mar08]. **Potentialities** [Sha53h, Sha93-33]. **Power** [GBR07, LB08, Sch91, Sha50e, Sha93-29]. **Powers** [AL07]. **pp** [Sil18]. **practical** [AMS+10]. **practice** [Bla65]. **Preceding** [CMU+53, CMU+93]. **predict** [SGB02]. **Prediction** [BBS46, BS50, BS93, BKU+94, Sha51a, Sha93-34, Bla65]. **predictors** [De'12]. **Presence** [Mar08, Sha93j, Sha49a, Sha84a, Sha84b, Sha98b]. **Presentation** [Sha51c, Sha93-35]. **Press** [Mur57]. **Price** [Mur57]. **primates** [Di 00]. **Primes** [Bul15]. **Princeton** [Mur57]. **principal** [TKL+12]. **Principle** [Tim02, SGG04]. **Principles** [DM15]. **Printed** [Sha51a, Sha93-34]. **Probabilistic** [Efr08, dLMSS54, dLMSS93, dLMSS56]. **Probabilities** [Cro63, Sha55b, Sha93p]. **Probability** [Fel66, Sha56c, Sha59c, Sha93w,

Sha93x, Sha93-36, Fel71, Fel09, SGB67a, SGB67b]. **Problem** [Sha53d, Sha53f, Sha56e, Sha93s, Pri84, Pri85, SS07, Wri67]. **Problems** [LS35, SSS34, LS35, SSS34]. **Proceedings** [Ano53]. **Process** [Sha48g]. **processes** [Koc05]. **Processing** [Cor87]. **Professor** [Ano01c]. **Profile** [Hor92, CFRC04]. **profile-profile** [CFRC04]. **profiles** [BKU+94]. **Profiling** [WVB10]. **Programmers** [Bar01]. **Programming** [Bar01, Sha50g, Sha93-37]. **Progress** [Sha63a, Sha93n]. **project** [MMS06]. **Promise** [Sha63a, Sha93n]. **Promoter** [SSK+05]. **Proof** [Sha50h]. **property** [SGB02]. **proportion** [YLR+10]. **proportional** [AES17]. **Proposal** [Sha78, MMS06, Ric03]. **protected** [JSMS12]. **protein** [APMS+12, SD96]. **provide** [RAL+08]. **published** [Hor11]. **Pulse** [OS46, Sha43b, Sha44b, Sha44d, Sha44e]. **Pulses** [Sha44a, Sha44d, Sha93e]. **putative** [FCW+00]. **Puzzle** [Efr08]. **pyrosequencing** [HGR+12].

**Q&A** [Ano17a]. **QSAR** [SGB02]. **QSDR** [APMS+12]. **Quadratic** [BERS86, RS06]. **Qualitative** [All04]. **quality** [CFRC04, RFME+12, YLR+10]. **Quantify** [WVB10]. **Quantitative** [AALR09]. **Quantum** [Ano16, LHA+16, Tim02, Bro00a, LCW+16, POA+08, Tim03, ZBM11]. **quasispecies** [HGR+12]. **quest** [Bro00a].

**R** [Wal01a]. **Raboty** [DL63]. **Ramsey** [AL07]. **random** [ABS11, WMS+12]. **Range** [WVB10]. **Rao** [RS06]. **Rate** [BSWCM14, Sha41f, Sha55b, Sha55c, Sha93p, Sha93-38, Sha93-50]. **rats** [SBS+13]. **Ray** [PST48]. **reactions** [SBS+13]. **Reading** [Sha53g, Sha93-30]. **Realization** [Sha53i, Sha93-39]. **Receiver** [OS44, OS93]. **Recognized** [Pin01]. **Reconciling** [HSS23]. **Reconstructing** [HDC96]. **Reconstruction** [BERS86]. **Rectifier** [Sha55e, Sha93-48]. **Recurrence** [RAL+07, Let06]. **Reduction** [LB08, PGM+12, Szi29, Szi76]. **Reed** [TWA+87]. **Reflections** [Luc12]. **regeneration** [RAL+08]. **regions** [Zee02]. **Reimagined** [Sil18]. **reinterpretation** [Lyn77]. **Related** [TWA+87, SSK+05, dTS+03]. **Relation** [Sha56c]. **Relations** [Zha09]. **relationship** [Liu07, YN11]. **relative** [Ric03, Wri67]. **Relativistic** [Kov20]. **Relay** [HS54, HS93, MS53b, MS53c, MS93c, MS93d, Sha37, Sha38, Sha40b, Sha41b, Sha50j, Sha93-42, Sha93-51, Sha93-59, Sha21]. **Relays** [MS54, MS93a, MS93b, MS56a, MS56b]. **relevant** [Luc12]. **Reliable** [MS54, MS56a, MS56b, MS93a, MS93b, Sha56f]. **Reluctant** [Wal01b]. **Remarkable** [Jam10, Tra10]. **Remembering** [Ano02]. **Reminder** [Pin01]. **remote** [CFRC04]. **Renyi** [LR05]. **Report** [Ano53]. **reports** [Ano40a]. **Requirements** [Sha50d, Sha93-28]. **Requires** [Sha53i, Sha93-39]. **Research** [Bar01, Col93, Hag79, Sha48h, MMS06]. **Resistance** [SH56, Sha93o, HGR+12]. **resolution** [LS10]. **Resources** [Ano17a]. **Results** [Sha41f, Sha41e, Sha55e, Sha56g, Sha57c, Sha93f, Sha93-50, Sha93-46, Sha93-47, Sha93-48, Sha57a, Sha57b]. **Retrospective** [Gal01, Gol01].

**Reversing** [Sha48g]. **Review** [Cer17, Doo49, Doo18, Mur57, Roc99, Sha49d, Sha49e, Sha50j, Sha93-41, Sha93-42, Sha93-43, Tra10, Roc11, Sil18]. **revisited** [Col93]. **Revolution** [Wal01a, Eme01]. **Rey** [ID00]. **Rice** [Hig63]. **richness** [Gor06, Pla06, SF03]. **Riemann** [Kov20]. **rigorous** [SF03]. **Rings** [Sha48d, Sha93-31]. **Riquet** [Tra10, Jam10]. **riqueza** [Pla06]. **Rise** [Sha54a]. **risk** [AES17, JSMS12]. **River** [JAS89]. **RNAs** [WMS+12]. **Rob** [Cer17, Doo18, Sil18]. **Robot** [Bar01]. **role** [ID00, Kah84]. **Rosen** [Per05]. **rotational** [GKL+13]. **Rubik** [Sha82b]. **Rubric** [Sha82b]. **rufiventris** [dPV00]. **Rufous** [dPV00]. **Rufous-bellied** [dPV00]. **Russian** [DL63].

**S** [TWA+87]. **sample** [Siq98]. **Sampling** [BERS86, Cro63, HDC96, Sha48i, Ano17b, JZL98, Mar91, Mar93]. **scale** [Mar08]. **scaling** [ID00, Ric03, SK04]. **School** [Pin01]. **Schuster** [Cer17, Sil18]. **Science** [Bar01, Far03, Hig63, Lap96, Lew21, Pin01, SG18, Far02, FFF09, Lyn77, Pic08, Smi05, WL85]. **Scientific** [Asp85, Sha80, Sha93-44, Bel53]. **scientists** [Bel54]. **Scott** [HSS23]. **scrambler** [Kah84]. **Scribe** [New56]. **Sculpture** [Bar01]. **search** [WGB09]. **searches** [CFRC04]. **Secrecy** [Sha49b, Sha93l, Sha98a]. **Secret** [Roc10, Roc11]. **secure** [Kah84]. **sediments** [BKU+94]. **segmenting** [Zha09]. **seiner** [Roc10, Roc11]. **Selectivity** [WVB10]. **Self** [FM99]. **Self-checking** [FM99]. **Semantic** [Som09, SB21]. **Semicentennial** [Hig63]. **Sender** [HS46, Sha40b, Sha93-59]. **sensitive** [GB01]. **separated** [Ano01b]. **September** [Ano53, Van89]. **Sequences** [HWO90, Sha48k, SD96, Zha09]. **Series** [BERS86, RS93, Sha43a, Sha93b, RS42, dTS+03]. **Shannon** [Bau01, Bot88, Cer17, Gal03, Jam09, Kha16, Kov20, Mur57, NS12, Pin01, RFME+12, Roc10, Sil18, Som09, SK01, TWA+87, APMS+12, AMS+10, ABS+13, Ale03, All04, AL07, ABS11, Ano40a, Ano40b, Ano00, Ano01a, Ano01b, Ano01c, Ano02, Ano17b, AALR09, AES17, Bar01, Bau01, BB88, BSWCM14, BQhH08, BKU+94, Bre63, Bro11, Bro00b, BLR+01, BLR+02, BERS86, CS01, CFRC04, Cer88, CHC+04, CHC+05, Cha72, CCHL05, CS09, CLM+01, Col93, Cou01, Cro63, Cro01, DGH+06, De'12, Di 00, Efr08, Ell09, Ell84, Eme01, Eph01, FM99, FMSS03, FCW+00, Gag98, Gal01, GKL+13, GBR07, GB00, GB01, Gol01, GBC+02, GWZC12, GFD03, Gor06, GPM06, Gui03, GV15, HN09, HDC96, Han10, HWO90, HGR+12, Hor90, Hor92, Hor11, HSBJ02, HTR+08, HSS23, ID00, JGH00, Jam10]. **Shannon** [Jan14, JAS89, JZL98, Joh01, JSMS12, Key05, KNS17, Koc05, LP12, LMC11, Lei07, LB08, Let06, Lew01, Liu07, Loe59, Lom05, LHV16, LR05, LM03, LS10, Lyn77, MHBL12, Mar08, Mar91, Mar93, Mat94, MPPP97, MBD+03, Nah13, NS10, NWV94, O'R12, PP06, PGM+12, Per05, Pla06, POA+08, Pri82, Pri84, Pri85, RAL+07, RM06, Ric03, RS06, Rif85, Roc99, Roc10, Roc11, RAL+08, RHQ+16, RD04, SSAK06, SB05, Sav11, Sav64, Sch06, SSK+05, Sen05, Sha82a, Sha02, Sha07, Sha14, SK04, SS07, SBS+13, Siq98, Sla97, SW93k, SW93l, SW93b, Smi05, SG17, SF03, SGB02, SJ04, SD96, Str14, SB21, SGG04, SG18, Tho09, Tim02, Tim03, TKL+12, TT12, Van89, Ver98, Wal01b, WGB09,

WBB+12, WMS+12, WVB10, WC99, Wri67, YN11, YCS12]. **Shannon** [Yoc00, YLR+10, Zac16, ZBM11, Zee02, Zha09, dPV00, dTS+03, Tra10]. **Shannon-entropy-based** [NS12]. **Shannon-information** [SK04]. **Shannon-type** [KNS17]. **Shape** [Sha44d]. **Shapes** [Bar01]. **Sharing** [ID00]. **SHED** [GPM06]. **Shortz** [Efr08]. **show** [YN11]. **Side** [Sha58a, Sha93g]. **Signal** [Sha50e, Sha54a, Sha93-29, HTR+08]. **Signaling** [Kov20]. **Signals** [BERS86, HDC96, HTR+08, JGH00]. **Significance** [Sha48h]. **Silico** [PGM+12]. **similarity** [WGB09]. **Simon** [Cer17, Sil18]. **Simplified** [BS50, BS93]. **Simpson** [Gor06, Key05]. **simulations** [LM03]. **Simultaneous** [Sha55d, Sha93-45]. **single** [Gor06]. **sites** [GKL+13]. **size** [SK04]. **skräck** [NWV94]. **small** [New56]. **Smoothing** [BBS46, BS50, BS93, Sha41c, Sha41g, Bla65]. **Sociable** [Bar01]. **Social** [RFME+12]. **Society** [Pin01]. **solubility** [SGB02]. **Solution** [Sha53f]. **Solutions** [LS35, SSS34]. **Solving** [Sha51c, Sha53f, Sha93-35, Pri84, Pri85]. **Some** [Sha41f, Sha41e, Sha48i, Sha52b, Sha55e, Sha56g, Sha57c, Sha93-50, Sha93-46, Sha93-47, Sha93-48, Sha93-49, Tho09, Sha57b]. **Soni** [Cer17, Doo18, Sil18]. **Sorry** [San05]. **sorting** [HSBJ02]. **Source** [Sha54b, Sha59a, Sha59b, Sha93i, Sha93q, Sha60]. **space** [GWZC12]. **Spanish** [Pla06, SW81]. **special** [Key05]. **species** [BQhH08, Ric03, SF03]. **specificity** [SSK+05]. **Spectral** [Zac16]. **spectrum** [Kah84]. **Speed** [Nyq24]. **Spielzeug** [Roc10, Roc11]. **spike** [HSBJ02]. **spin** [CS09, ZBM11]. **spiral** [APMS+12]. **spiral-graph** [APMS+12]. **Splines** [BERS86]. **spontaneous** [RHQ+16]. **spread** [Kah84]. **Square** [BS50, BS93]. **Stable** [WMS+12]. **Staff** [Sha50j, Sha93-42]. **state** [PP06]. **States** [Sha54c, Sha93-58, Sha56h]. **Statfjord** [BKU+94]. **Statistical** [Sha45b, Sha48k, Siq98, Wri67]. **status** [Wri67]. **Staying** [Sha07]. **stem** [WMS+12]. **Stephen** [Sha49e, Sha93-43]. **still** [Luc12]. **Storage** [Bot88]. **straightforward** [LR05]. **Strategic** [Pin01]. **strategy** [WGB09]. **stress** [TKL+12]. **strong** [GFD03]. **Structures** [Sha49e, Sha93-43]. **Student** [Pin01]. **Studien** [SM74]. **Studies** [SM56, SM74, SW93a, Mur57]. **Study** [Hag79, Sha41f, Sha93-50, CLM+01, Rog94]. **style** [CLM+01]. **sub** [TKL+12]. **subcutaneous** [SBS+13]. **subjects** [HTR+08, Szi29, Szi76]. **Submodular** [KNS17]. **Subscriber** [Sha40b, Sha93-59]. **summer** [MMS06]. **Sumset** [GV15]. **Supply** [LB08]. **supposed** [Tim03]. **Survey** [Asp85]. **Swedish** [NWV94]. **Switching** [Cha72, Sha37, Sha38, Sha46, Sha49f, Sha53i, Sha55d, Sha93y, Sha93-39, Sha93-51, Sha93-45, Sha93-53, Sha21, CSJJ10, SM53]. **Symbol** [Sha54b, Sha93q]. **Symbolic** [Sha37, Sha38, Sha93-51, Sha21, Let06, Sug13]. **Symmetrical** [Sha50a, Sha93-52]. **Symposium** [Ano53]. **synonymous** [Zee02]. **Synthesis** [GBR07, Sha49f, Sha55d, Sha93-45, Sha93-53]. **Synthesizer** [MS53c, MS93d]. **synthetic** [SGB02]. **System** [OS46, Sha43a, Sha93b, Szi29, Szi64, SSAK06, Szi76]. **Systems** [BBS46, HS46, Sha41a, Sha44c, Sha45b, Sha48j, Sha49b, Sha93c, Sha93l, Sha98a, GWZC12].

**Takes** [Ano16]. **Taking** [Kra21]. **Tale** [Int03]. **Talk** [Bre63]. **Tandem** [DS46, DS93]. **targets** [FCW+00]. **teaching** [Jan14]. **Technical** [Pin01]. **Technik** [Hag79]. **Technology** [Gal06, Hag79, Kah84]. **Telegraph** [Nyq24, Nyq28]. **Telephone** [HS46, Sha46, Sha50d, Sha93-28]. **temperature** [NS12]. **Tentaexpertens** [NWV94]. **Teoría** [SW81, SW71, SW83]. **teorii** [DL63]. **Terminal** [DS46, DS93, RS93, Sha49f, Sha93-53, RS42]. **Terms** [BERS86, Col93, ZBM11]. **Testable** [GBR07]. **Testing** [Di 00, Rif85]. **tests** [Rif85, Siq98]. **them** [Pic08]. **Theorem** [HDC96, Sha40a, Sha48i, Sha93-54, Ano17b, Sha49g]. **Theorems** [Sha48k, Sha59b, Sha93i, Sha60]. **Theoretic** [Zee02]. **Theoretical** [Sha40c, Sha93a]. **Theorie** [Roc10, Roc11, SM74, SW75a, Sha50f]. **Theoriebildung** [Hag79]. **Theories** [All04, Som09, Bel53]. **Theory** [ACK+01, Ano53, Ano98, Ano00, Ano01a, BS50, BS93, Bro00b, CLM+01, DL63, Doo49, Fel66, Gal06, Hag79, Hor90, Lom05, Nyq28, Roc99, Roc10, Roc11, Sha41g, Sha42, Sha45a, Sha48b, Sha48c, Sha49b, Sha49c, SW49, Sha50f, Sha50i, Sha52b, Sha53a, Sha53b, Sha53e, Sha56b, Sha56d, SW63, Sha68b, SW71, SW75a, SW76, SW83, Sha93f, Sha93k, Sha93l, Sha93t, Sha93u, Sha93z, Sha93-27, Sha93-60, Sha93-40, Sha93-49, Sha93-55, Sha97, Sha98a, SW98, Sha01, SW93c, Som09, Str14, Wea53, ABS+13, Bla65, Ell09, Eme01, Fel71, Fel09, Gag98, Gui03, Hor11, Lyn77, Mar91, Mar93, RHQ+16, Sav11, Sch06, Sha41d, Sha57a, Sha58c, Sha63b, SW64, SW69, SW72, SW75b, SW78, SW81, Sla97, Sle74, Tho09, Ver98, WBB+12, Wri67, Yoc00]. **Theory-Building** [Hag79]. **Thermodynamic** [Szi64, Szi29, Szi76]. **thermodynamischen** [Szi29]. **Theseus** [Sha14]. **thesis** [Eme01]. **Thinking** [Sha52a]. **Three** [CMU+53, CMU+93, SJ04]. **three-dimensional** [SJ04]. **Throbac** [Sha53k, Sha53j, Sha93-56]. **thrush** [dPV00]. **Time** [Sha43a, Sha54a, Sha93b, Hor11, LMC11, dTS+03]. **time-varying** [LMC11]. **tissue** [RAL+08, SSK+05]. **tissues** [SBS+13]. **today** [Eme01]. **tool** [RD04]. **Topics** [Nyq28, Sha52b, Sha93-49, TWA+87, Mar93]. **topological** [GPM06]. **TOPSIS** [JSMS12]. **Tower** [Sha53l]. **Toys** [Roc10, Roc11]. **trace** [BKU+94]. **Transcendental** [Sha48f]. **Transformation** [JZL98]. **Transformations** [Bul15, Sha49e, Sha93-43]. **Transforms** [TWA+87]. **Transient** [DS46, DS93, HTR+08]. **Transmission** [Nyq28, Sha50e, Sha55b, Sha93p, Sha93-29]. **Transmitter** [OS44, OS93, Sha58a, Sha93g]. **Transmitting** [Sha50c]. **Treatment** [Sha53d, Sha93s, HGR+12, LS10, Siq98]. **Tribute** [Lew01, SF03]. **turbo** [Gui04]. **Turdus** [dPV00]. **Turing** [Bar01, Sha54c, Sha56h, Sha93-58, Smi05, SG18]. **Tutorial** [Wha78]. **Twentieth** [Sha93n, Sha63a]. **Twist** [Sha78]. **Two** [RS93, Sha44e, Sha49f, Sha53i, Sha54c, Sha61, Sha93-39, Sha93-53, Sha93-57, Sha93-58, RS42, Sha56h]. **Two-Terminal** [RS93, Sha49f, Sha93-53, RS42]. **Two-Way** [Sha93-57, Sha61]. **type** [KNS17]. **types** [TKL+12]. **Typing** [PGM+12].

**Ultra** [HGR+12]. **Ultra-deep** [HGR+12]. **unbreakable** [Kah84]. **uncertainty** [Col93, SGG04]. **Understanding** [Ale03]. **Unicyclist** [Hor90]. **unifying** [RS06]. **Unilateral** [DS46, DS93]. **Uniqueness** [Sha41b]. **Units** [FM99]. **Universal** [Sha54c, Sha93-58, Sha56h]. **Universality** [FMSS03]. **universe** [Sen21]. **University** [Mur57, Hig63]. **unreasonable** [Jan14]. **Unreliable** [Sha56f]. **urinary** [TKL+12]. **usage** [FMSS03, Zee02]. **Use** [LS10, Sha40b, Sha93-59, SF03]. **used** [Sch06]. **Using** [BSWCM14, DGH+06, GBR07, MS54, MS93a, MS93b, PGM+12, dPV00, Gor06, HDC96, LMC11, MS56a, MS56b, PP06, Ric03, TKL+12].

**Validation** [PP06]. **Validity** [HWO90]. **Value** [WVB10, BQhH08]. **values** [HTR+08, Siq98]. **Vanishing** [Bar01]. **Vannevar** [Sha39, Sha93v]. **variability** [GB01, dPV00]. **Variables** [Sha53i, Sha55d, Sha93-39, Sha93-45]. **Variety** [Lyn77]. **varying** [LMC11]. **Vectors** [JGH00]. **Vehicle** [Sha50e, Sha93-29]. **ventilation** [RAL+07]. **Venus** [Smi05]. **Vernam** [Sha43a, Sha93b]. **versus** [Let06]. **Very** [Sha48a, Sha54b, Sha93q]. **Views** [Bar01]. **VIII** [Pin01]. **vinyl** [SBS+13]. **virus** [HGR+12]. **vocal** [dPV00]. **Vol** [BBS46, Koc05]. **volume** [Fel09].

**War** [Kah84]. **Was** [Ano01c]. **wavelet** [HSBJ02, JZL98, TKL+12]. **Way** [Sha93-57, Sha61]. **Weaver** [SB05]. **Wesen** [Szi29]. **Which** [Sha48j, dR55]. **who** [Ano01b]. **Width** [KNS17]. **Wiener** [BQhH08, BKU+94, Cro63, Di 00, JAS89, Key05, SB05, Sha49d, Sha93-41, Siq98, SF03, WC99, YLR+10]. **Winners** [Pin01]. **winning** [Cha72]. **Wins** [Ano40b, Bar01]. **Wireless** [Mar08]. **Wistar** [SBS+13]. **Without** [Sha53f]. **women** [FFF09]. **Work** [Gal01, CLM+01, Eme01]. **world** [New56, Kah84]. **Writing** [Pin01]. **writings** [SW93l]. **WWII** [Min95].

**years** [Ver98]. **young** [Bel54]. **Youthful** [Ano40b].

**Zeilinger** [Tim02]. **Zero** [Sha56i, Sha93-61]. **zur** [Hag79, SM74].

# References

**Antolin:2009:FJS**

[AALR09] J. Antolin, J. C. Angulo, and S. Lopez-Rosa. Fisher and Jensen–Shannon divergences: Quantitative comparisons among distributions. application to position and momentum atomic densities. *Journal of Chemical Physics*, 130(7):074110, February 21, 2009. CODEN JCPSA6. ISSN 1089-7690.

**Anand:2011:SNE**

[ABS11] Kartik Anand, Ginestra Bianconi, and Simone Severini. Shan-

non and von Neumann entropy of random networks with heterogeneous expected degree. *Physical Review E (Statistical physics, plasmas, fluids, and related interdisciplinary topics)*, 83(3 Pt 2): 036109, March 2011. CODEN PLEEE8. ISSN 1550-2376.

**Akhter:2013:ASI**

[ABS+13] Sajia Akhter, Barbara A. Bailey, Peter Salamon, Ramy K. Aziz, and Robert A. Edwards. Applying Shannon's information theory to bacterial and phage genomes and metagenomes. *Scientific Reports*, 3(??):1033–??, ???? 2013. CODEN SRCEC3. ISSN 2045-2322.

**Aftab:2001:ITI**

[ACK+01] Omar Aftab, ?. Cheung, ?. Kim, ?. Thakkar, and ?. Yeddanapudi. Information theory: Information theory and the digital age. Web document for 6.933 Project History, Massachusetts Institute of Technology., December 14, 2001. URL `http://web.mit.edu/6.933/www/Fall2001/Shannon2.pdf`.

**Asadi:2017:CGF**

[AES17] Majid Asadi, Nader Ebrahimi, and Ehsan S. Soofi. Connections of Gini, Fisher, and Shannon by Bayes risk under proportional hazards. *Journal of Applied Probability*, 54(4):1027–1050, December 2017. CODEN JPRBAM. ISSN 0021-9002 (print), 1475-6072 (electronic). URL `https://www.cambridge.org/core/journals/journal-of-applied-probability/article/connections-of-gini-fisher-and-shannon-by-bayes-risk-under-proportional-hazards/CCCA43E06A752650C3D936372D807DB8`.

**Alon:2007:GPD**

[AL07] Noga Alon and Eyal Lubetzky. Graph powers, Delsarte, Hoffman, Ramsey, and Shannon. *SIAM Journal on Discrete Mathematics*, 21(2):329–348, ???? 2007. CODEN SJDMEC. ISSN 0895-4801 (print), 1095-7146 (electronic).

**Aleksander:2003:UIB**

[Ale03] Igor Aleksander. Understanding information, bit by bit: Shannon's equations. In Farmelo [Far03], pages 213–230. ISBN 1-86207-555-7. LCCN Q125 .I88 2003.

**Allwein:2004:QFS**

[All04] Gerard Allwein. A qualitative framework for Shannon information theories. In *Proceedings of the 2004 Workshop on New Security*

*Paradigms*, NSPW '04, pages 23–31. ACM Press, New York, NY 10036, USA, 2004. ISBN 1-59593-076-0. URL `http://doi.acm.org/10.1145/1065907.1066030`.

**Ahmadian:2010:PDS**

[AMS+10] Zahra Ahmadian, Javad Mohajeri, Mahmoud Salmasizadeh, Risto M. Hakala, and Kaisa Nyberg. A practical distinguisher for the Shannon cipher. *The Journal of Systems and Software*, 83(4):543–547, April 2010. CODEN JSSODM. ISSN 0164-1212 (print), 1873-1228 (electronic).

**Anonymous:1934:GL**

[Ano34] Anonymous. Gaylord locals. *Otsego County Herald Times*, ??(??): ??, November 15, 1934.

**Anonymous:1940:IRC**

[Ano40a] Anonymous. Institute reports on Claude Shannon. *Otsego County Herald Times*, ??(??):??, February 8, 1940.

**Anonymous:1940:YIW**

[Ano40b] Anonymous. Youthful instructor wins Noble Award: Claude E. Shannon, 24, honored by electrical engineers. *New York Times*, ??(??):8, January 24, 1940. CODEN NYTIAO. ISSN 0362-4331 (print), 1542-667X, 1553-8095. URL `https://search.proquest.com/hnpnewyorktimes/docview/105178385`. Noble Award for paper [Sha38].

**Anonymous:1953:RPS**

[Ano53] Anonymous, editor. *Report of Proceedings, Symposium on Information Theory, London, September, 1950*, number 1 in Transactions on Information Theory. Institute of Radio Engineers, London, UK, February 1953.

**Anonymous:1993:P**

[Ano93] Anonymous. On this page. In Sloane and Wyner [SW93k], page ?? ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. With a profile of Shannon by Anthony Liversidge (pp. xix–xxxiii).

**Anonymous:1998:GHF**

[Ano98] Anonymous. Gaylord honors 'father to the information theory'. *Otsego County Herald Times*, ??(??):??, September 3, 1998.

**Anonymous:2000:GCS**

[Ano00] Anonymous. Gaylord's Claude Shannon: "Einstein of mathematical theory". *Gaylord Herald Times*, ??(??):??, October 11, 2000.

**Anonymous:2001:CSF**

[Ano01a] Anonymous. Claude Shannon, father of information theory, dies at 84. Web document., February 2001. URL `http://www.bell-labs.com/news/2001/february/26/1.html`.

**Anonymous:2001:CSP**

[Ano01b] Anonymous. Claude Shannon: Playful genius who invented the bit, separated the medium from the message, and laid the foundations for all digital communications. *The Times [London, UK]*, ??(??):??, ???? 2001. ISSN 0140-0460, 0956-1382. URL `http://www-groups.dcs.st-and.ac.uk/history/Obits/Shannon.html`.

**Anonymous:2001:PCS**

[Ano01c] Anonymous. MIT Professor Claude Shannon dies: Was founder of digital communications. *MIT News*, ??(??):??, February 27, 2001. URL `http://news.mit.edu/2001/shannon; http://newsoffice.mit.edu/2001/shannon`.

**Anonymous:2002:RCS**

[Ano02] Anonymous. Remembering Claude Shannon. Web blog, 2002. URL `http://chnm.gmu.edu/digitalhistory/links/cached/chapter6/6_19b_surveyresponse.htm`.

**Anonymous:2016:EMT**

[Ano16] Anonymous. The Enigma machine takes a quantum leap. *R&D Magazine*, ??(??):??, September 7, 2016. URL `http://www.rdmag.com/news/2016/09/enigma-machine-takes-quantum-leap`. News story on quantum data locking research in [LCW+16, LHA+16].

**Anonymous:2017:MAM**

[Ano17a] Anonymous. Meet the authors of *A Mind at Play* [resources Q&A]. *IEEE Spectrum*, 54(7):20, July 2017. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

**Anonymous:2017:NSS**

[Ano17b] Anonymous. Nyquist–Shannon sampling theorem. Online encyclopedia article, 2017. URL `https://en.wikipedia.org/wiki/Nyquist%E2%80%93Shannon_sampling_theorem`.

**Aguiar-Pulido:2012:NBQ**

[APMS+12] Vanessa Aguiar-Pulido, Cristian R. Munteanu, Jose A. Seoane, Enrique Fernandez-Blanco, Lazaro G. Perez-Montoto, Humberto Gonzalez-Diaz, and Julian Dorado. Naive Bayes QSDR classification based on spiral-graph Shannon entropies for protein biomarkers in human colon cancer. *Molecular BioSystems*, 8(6):1716–1722, ???? 2012. CODEN MBOIBW. ISSN 1742-2051 (print), 1742-206X (electronic).

**Aspray:1985:SCI**

[Asp85] William F. Aspray. The scientific conceptualization of information: a survey. *Annals of the History of Computing*, 7(2): 117–140, April/June 1985. CODEN AHCOE5. ISSN 0164-1239. URL `http://dlib.computer.org/an/books/an1985/pdf/a2117.pdf; http://ieeexplore.ieee.org/document/4640393/; http://www.computer.org/annals/an1985/a2117abs.htm`.

**Baran:2001:NVP**

[Bar01] Nicholas Baran. News and views: Programming the shapes of sculpture; computation expert wins Turing Award; Cobol programmers a vanishing breed?; science controversies go online; MIT builds sociable robot; research finds flaw in DNA; binary pioneer [Claude Shannon] dies at 84. *Dr. Dobb's Journal of Software Tools*, 26(5):18, May 2001. CODEN DDJOEB. ISSN 1044-789X. URL `http://www.ddj.com/`.

**Bauer:2001:CES**

[Bau01] Friedrich L. Bauer. Claude Elwood Shannon 1916–2001. (German) [Claude Elwood Shannon 1916–2001]. *Informatik Spektrum*, 24 (4):228–229, August 2001. CODEN INSKDW. ISSN 0170-6012 (print), 1432-122X (electronic). URL `http://link.springer.com/article/10.1007/s002870100168`.

**Beauchemin:1988:GHE**

[BB88] Pierre Beauchemin and Gilles Brassard. Generalization of Hellman's extension to Shannon's approach to cryptography. *Journal of Cryptology: the journal of the International Association*

*for Cryptologic Research*, 1(2):129–131, October 1988. CODEN JOCREQ. ISSN 0933-2790 (print), 1432-1378 (electronic).

**Blackman:1946:DSP**

[BBS46] R. B. Blackman, H. W. Bode, and Claude E. Shannon. Data smoothing and prediction in fire-control systems, vol. 1, gunfire control. Summary Technical Report AD 200795, National Defense Research Committee, Washington, DC, USA, 1946. 71–159, 166–167 pp. Also in National Military Establishment Research and Development Board, Report #13 MGC 12/1, August 15, 1948. Superseded by [BS50] and by [Bla65].

**Bello:1953:GST**

[Bel53] Francis Bello. Great scientific theories. *Fortune*, ??(??):136–158, December 1953. CODEN FORTAP. ISSN 0015-8259.

**Bello:1954:YS**

[Bel54] Francis Bello. The young scientists. *Fortune*, ??(??):142, June 1954. CODEN FORTAP. ISSN 0015-8259.

**Butzer:1986:SSS**

[BERS86] P. L. Butzer, W. Engels, S. Ries, and R. L. Stens. The Shannon sampling series and the reconstruction of signals in terms of linear, quadratic and cubic splines. *SIAM Journal on Applied Mathematics*, 46(2):299–323, April 1986. CODEN SMJMAP. ISSN 0036-1399 (print), 1095-712X (electronic).

**Brakstad:1994:PSW**

[BKU+94] Frode Brakstad, Olav M. Kvalheim, Karl I. Ugland, Kjell Tjessem, and Karl Bryne. Prediction of the Shannon Wiener diversity index from trace element profiles in sediments around the Statfjord platforms. *Chemosphere*, 29(7):1441–1465, ???? 1994. CODEN CMSHAF. ISSN 0045-6535 (print), 1879-1298 (electronic).

**Blackman:1965:LDS**

[Bla65] R. B. (Ralph Beebe) Blackman. *Linear data-smoothing and prediction in theory and practice*. Addison-Wesley series in electrical engineering. Addison-Wesley, Reading, MA, USA, 1965. xiii + 182 pp. LCCN QA275 .B55.

**Bruhn:2001:SEA**

[BLR+01] Joergen Bruhn, Lutz E. Lehmann, Heiko Roepcke, Thomas W. Bouillon, and Andreas Hoeft. Shannon entropy applied to the

measurement of the electroencephalographic effects of desflurane. *Anesthesiology (Hagerstown)*, 95(1):30–35, ???? 2001. ISSN 0003-3022 (print), 1528-1175 (electronic).

**Bruhn:2002:SEA**

[BLR+02] Joergen Bruhn, Lutz E. Lehmann, Heiko Roepcke, Thomas W. Bouillon, and Andreas Hoeft. Shannon entropy applied to the measurement of the EEG effects of desflurane. *Anesthesiology Abstracts of Scientific Papers Annual Meeting*, ??(2000):265–??, ???? 2002.

**Bottini:1988:ASM**

[Bot88] S. Bottini. An after-shannon measure of the storage capacity of an associative noise-like coding memory. *Biological cybernetics*, 59(3):151–160, ???? 1988. CODEN BICYAF. ISSN 0340-1200 (print), 1432-0770 (electronic).

**Bing:2008:EVA**

[BQhH08] Wang Bing, Zheng Qiu-hong, and Guo Hao. Economic value assessment of forest species diversity conservation in China based on the Shannon–Wiener index. *Forest Research*, 21(2):268–274, ???? 2008. ISSN 1001-1498.

**Brewer:1963:MMM**

[Bre63] Brock Brewer. The man-machines may talk first to Dr. Shannon. *Vogue*, ??(??):139–??, April 15, 1963.

**Brown:2000:MMM**

[Bro00a] J. R. (Julian Russell) Brown. *Minds, machines, and the multiverse: the quest for the quantum computer*. Simon and Schuster, New York, NY, USA, 2000. ISBN 0-684-81481-1, 0-7432-4263-7. 396 pp. LCCN QA76.889 .B76 2000. URL `http://catdir.loc.gov/catdir/bios/simon054/99056638.html; http://catdir.loc.gov/catdir/description/simon032/99056638.html; http://catdir.loc.gov/catdir/enhancements/fy0705/99056638-s.html; http://catdir.loc.gov/catdir/enhancements/fy0707/99056638-t.html`.

**Brown:2000:SIT**

[Bro00b] J. R. (Julian Russell) Brown. Shannon's information theory. In *Minds, machines, and the multiverse: the quest for the quantum computer* [Bro00a], page ?? ISBN 0-684-81481-1, 0-7432-4263-7. LCCN QA76.889 .B76 2000. URL `http://catdir.`

loc.gov/catdir/bios/simon054/99056638.html; http://catdir.loc.gov/catdir/description/simon032/99056638.html; http://catdir.loc.gov/catdir/enhancements/fy0705/99056638-s.html; http://catdir.loc.gov/catdir/enhancements/fy0707/99056638-t.html.

**Brooks:2011:CES**

[Bro11] Joseph K. Brooks. Claude Elwood Shannon papers: A finding aid to the collection in the Library of Congress. Report, US Library of Congress, Washington, DC, March 2011. URL http://hdl.loc.gov/loc.mss/eadmss.ms003071; http://lcweb2.loc.gov/service/mss/eadxmlmss/eadpdfmss/2003/ms003071.pdf.

**Bode:1950:SDL**

[BS50] H. W. Bode and Claude E. Shannon. A simplified derivation of linear least square smoothing and prediction theory. *Proceedings of the Institute of Radio Engineers*, 38(4):417–425, 1950. CODEN PIREAE. ISSN 0096-8390 (print), 2162-6634 (electronic). URL http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=1701241.

**Bode:1993:SDL**

[BS93] H. W. Bode and Claude E. Shannon. A simplified derivation of linear least square smoothing and prediction theory. In Sloane and Wyner [SW93k], pages 628–636. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Decimal classification: 510. Original manuscript received by the Institute. July 13,1949; revised manuscript received. January 17, 1950. Originally published in [BS50].

**Bin-Salem:2014:LPD**

[BSWCM14] Ali Abdulqader Bin-Salem, Tat-Chee Wan, Yung-Wey Chong, and Imad J. Mohamad. Lte peak data rate estimation using modified alpha-Shannon capacity formula. In *Proceedings of the AINTEC 2014 on Asian Internet Engineering Conference*, AINTEC '14, pages 9:9–9:14. ACM Press, New York, NY 10036, USA, 2014. ISBN 1-4503-3251-X. URL http://doi.acm.org/10.1145/2684793.2684795.

**Bullynck:2015:CPT**

[Bul15] Maarten Bullynck. Computing primes (1929–1949): Transformations in the early days of digital computing. *IEEE Annals*

*of the History of Computing*, 37(3):44–54, July/September 2015. CODEN IAHCEX. ISSN 1058-6180 (print), 1934-1547 (electronic). URL `http://www.computer.org/csdl/mags/an/2015/03/man2015030044-abs.html`.

**Cass:2016:DA**

[Cas16] Stephen Cass. The Digital Apple. *IEEE Spectrum*, 53(1):19–20, January 2016. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

**Chen:2005:DSI**

[CCHL05] Hong-Da Chen, Chang-Heng Chang, Li-Ching Hsieh, and Hoong-Chien Lee. Divergence and Shannon information in genomes. *Physical Review Letters*, 94(17):178103, May 6, 2005. CODEN PRLTAO. ISSN 0031-9007 (print), 1079-7114 (electronic), 1092-0145.

**Cerny:1988:EIH**

[Cer88] Melinda Cerny. Engineering industry honors Shannon, his hometown. *Otsego Herald Times*, ??(??):??, September 3, 1988.

**Cerf:2017:BRM**

[Cer17] Vint Cerf. A digital genius at play [book review: *A mind at play: how Claude Shannon invented the information age*, by Jimmy Soni and Rob Goodman, Simon & Schuster: 2017. ISBN: 978-1-4767-6668-3]. *Nature*, 547(7662):159, July 13, 2017. CODEN NATUAS. ISSN 0028-0836 (print), 1476-4687 (electronic). URL `http://www.nature.com/nature/journal/v547/n7662/full/547159a.html`.

**Capriotti:2004:SEB**

[CFRC04] Emidio Capriotti, Piero Fariselli, Ivan Rossi, and Rita Casadio. A Shannon entropy-based filter detects high-quality profile-profile alignments in searches for remote homologues. *Proteins: Structure, Function, and Bioinformatics*, 54(2):351–360, ???? 2004. CODEN PSFBAF. ISSN 0887-3585 (print), 1097-0134 (electronic).

**Chase:1972:IGA**

[Cha72] Stephen M. Chase. An implemented graph algorithm for winning Shannon Switching Games. *Communications of the ACM*, 15(4):253–256, April 1972. CODEN CACMA2. ISSN 0001-0782 (print), 1557-7317 (electronic).

**Chang:2004:SIC**

[CHC+04] Chang-Heng Chang, Li-Ching Hsieh, Ta-Yuan Chen, Hong-Da Chen, Liaofu Luo, and Hoong-Chien Lee. Shannon information in complete genomes. *Proceedings / IEEE Computational Systems Bioinformatics Conference, CSB. IEEE Computational Systems Bioinformatics Conference*, ??(??):20–30, ???? 2004. ISSN 1551-7497.

**Chang:2005:SIC**

[CHC+05] Chang-Heng Chang, Li-Ching Hsieh, Ta-Yuan Chen, Hong-Da Chen, Liaofu Luo, and Hoong-Chien Lee. Shannon information in complete genomes. *Journal of Bioinformatics and Computational Biology*, 3(3, Sp. Iss. SI):587–608, ???? 2005. CODEN JBCBBK. ISSN 0219-7200 (print), 1757-6334 (electronic).

**Campbell-Kelly:2019:EED**

[CK19] Martin Campbell-Kelly. *Exploring the Early Digital*. History of Computing. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2019. ISBN 3-030-02151-3 (e-book), 3-030-02152-1 (e-book), 3-030-02153-X (print). ISSN 2190-6831 (print), 2190-684X (electronic). xii + 203 + 30 pp. LCCN QA76.17.

**Chiu:2001:MTC**

[CLM+01] Eugene Chiu, Jocelyn Lin, Brok Mcferron, Noshirwan Petigara, and Satwiksai Seshasai. Mathematical theory of Claude Shannon: A study of the style and context of his work up to the genesis of information theory. Web document for MIT course 6.933J / STS.420J The Structure of Engineering Revolutions., December 2001. URL `http://web.mit.edu/6.933/www/Fall2001/Shannon1.pdf`.

**Cherry:1953:DPT**

[CMU+53] E. C. Cherry, S. H. Moss, ?. Uttley, I. J. Good, W. Lawrence, W. P. Anderson, and Claude E. Shannon. Discussion of preceding three papers. In Anonymous [Ano53], pages 169–174.

**Cherry:1993:DPT**

[CMU+93] E. C. Cherry, S. H. Moss, ?. Uttley, I. J. Good, W. Lawrence, W. P. Anderson, and Claude E. Shannon. Discussion of preceding three papers. In Sloane and Wyner [SW93k], pages 184–189. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993.

Published in *IRE Transactions Information Theory*, No. 1, Feb. 1950. Originally published in [CMU+53].

**Cole:1993:RSR**

[Col93] Charles Cole. Research: Shannon revisited: Information in terms of uncertainty. *Journal of the American Society for Information Science*, 44(4):204–211, May 1993. CODEN AISJB6. ISSN 0002-8231 (print), 1097-4571 (electronic).

**Cortada:1987:HDD**

[Cor87] James W. Cortada. *Historical Dictionary of Data Processing: Biographies*. Greenwood Press, 88 Post Road West, Westport, CT 06881, USA, 1987. ISBN 0-313-25651-9 (lib. bdg.). xiii + 321 pp. LCCN QA76.15 .C66 1987.

**Coughlin:2001:CSG**

[Cou01] Kevin Coughlin. Claude Shannon: The genius of the digital age. *Star-Ledger (New Jersey)*, ??(??):??, February 28, 2001.

**Cronholm:1963:GMO**

[Cro63] J. N. Cronholm. A general method of obtaining exact sampling probabilities of the Shannon–Wiener measure of information. Report H. Rep 575, U.S. Army Medical Research Laboratory, ????, June 7, 1963. 1–9 pp.

**Crow:2001:SBF**

[Cro01] James F. Crow. Shannon's brief foray into genetics. *Genetics*, 159(3):915–917, ???? 2001. CODEN GENTAE. ISSN 0016-6731 (print), 1943-2631 (electronic). URL `http://www.genetics.org/content/159/3/915.full`.

**Calderbank:2001:OCS**

[CS01] Robert Calderbank and Neil J. Sloane. Obituary. Claude Shannon (1916–2001). *Nature*, 410(6830):768, April 12, 2001. CODEN NATUAS. ISSN 0028-0836 (print), 1476-4687 (electronic). URL `http://www.nature.com/nature/journal/v410/n6830/full/410768a0.html`.

**Chen:2009:ISD**

[CS09] Lixiang Chen and Weilong She. Increasing Shannon dimensionality by hyperentanglement of spin and fractional orbital angular momentum. *Optics Letters*, 34(12):1855–1857, June 15, 2009. CODEN OPLEDP. ISSN 0146-9592.

**Chan:2010:OFS**

[CSJJ10] Vincent W. S. Chan, Claude E. Shannon, J. Jacobs, and I. Jacobs. Optical flow switching. In IEEE, editor, *15th Optoelectronics and Communications Conference: OECC2010: July 5–9, 2010, Sapporo Convention Center, Sapporo, Japan*, pages 404–405. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 2010. ISBN 1-4244-6785-3. LCCN TK5103.59. URL `http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=5588616`.

**Death:2012:MDM**

[De'12] Glenn De'ath. The multinomial diversity model: linking Shannon diversity to multiple predictors. *Ecology (Washington D C)*, 93 (10):2286–2296, ???? 2012.

**Dawy:2006:GMM**

[DGH+06] Zaher Dawy, Bernhard Goebel, Joachim Hagenauer, Christophe Andreoli, Thomas Meitinger, and Jakob C. Mueller. Gene mapping and marker clustering using Shannon's mutual information. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 3(1):47–56, January 2006. CODEN ITCBCY. ISSN 1545-5963 (print), 1557-9964 (electronic).

**DiBitetti:2000:DGA**

[Di 00] Mario S. Di Bitetti. The distribution of grooming among female primates: Testing hypotheses with the Shannon–Wiener diversity index. *Behaviour*, 137(11):1517–1540, ???? 2000. CODEN BEHAA8. ISSN 0005-7959 (print), 1568-539X (electronic).

**Dobrushin:1963:RPT**

[DL63] R. L. Dobrushin and O. B. Lupanova, editors. *Raboty po teorii informacii i kibernetike. (Russian) [Papers in Information Theory and Cybernetics]*. Izd. Inostr. Lit., Moscow, USSR, 1963. 829 pp. LCCN ???? Preface by A. N. Kolmogorov.

**deLeeuw:1954:CPM**

[dLMSS54] Karel de Leeuw, Edward F. Moore, Claude E. Shannon, and N. Shapiro. Computability by probabilistic machines. Memorandum 54-114-37, Bell Laboratories, Murray Hill, NJ, USA, October 21, 1954. Published in [87], pp. 183-212. (Which publication is that??).

**deLeeuw:1956:CPM**

[dLMSS56] K. de Leeuw, E. F. Moore, C. E. Shannon, and N. Shapiro. Computability by probabilistic machines. In *Automata studies*, Annals of mathematics studies, no. 34, pages 183–212. Princeton University Press, Princeton, NJ, USA, 1956.

**deLeeuw:1993:CPM**

[dLMSS93] Karel de Leeuw, Edward F. Moore, Claude E. Shannon, and N. Shapiro. Computability by probabilistic machines. In Sloane and Wyner [SW93k], pages 742–771. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [dLMSS54].

**Denning:2015:GPC**

[DM15] Peter J. Denning and Craig H. Martell. *Great Principles of Computing*. MIT Press, Cambridge, MA, USA, 2015. ISBN 0-262-52712-X (paperback). xviii + 302 pp. LCCN QA76 .D3483 2015.

**Doob:1949:RMT**

[Doo49] Joseph L. Doob. Review of *A Mathematical Theory of Communication*. *Mathematical Reviews*, 10(??):133–??, ???? 1949. CODEN MAREAR. ISSN 0025-5629.

**Dooley:2018:RMP**

[Doo18] John F. Dooley. Review of *A Mind at Play* by Jimmy Soni and Rob Goodman. *Cryptologia*, 42(2):183–190, 2018. CODEN CRYPE6. ISSN 0161-1194 (print), 1558-1586 (electronic).

**daSilva:2000:USE**

[dPV00] Maria Luisa da Silva, Jose Roberto C. Piqueira, and Jacques M. E. Vielliard. Using Shannon entropy on measuring the individual variability in the rufous-bellied thrush turdus rufiventris vocal communication. *Journal of Theoretical Biology*, 207(1):57–64, November 7, 2000. CODEN JTBIAP. ISSN 0022-5193 (print), 1095-8541 (electronic).

**deRosa:1955:WFD**

[dR55] Louis A. de Rosa. In which fields do we graze? *IRE Transactions on Information Theory*, 1(3):2, December 1955. CODEN IRITAY. ISSN 0096-1000 (print), 2168-2712 (electronic). URL `http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=1055141`. See Shannon's response [Sha56a].

**Dolph:1946:TBL**

[DS46] C. L. Dolph and Claude E. Shannon. The transient behavior of a large number of four-terminal unilateral linear networks connected in tandem. Memorandum MM 46-110-49, Bell Laboratories, Murray Hill, NJ, USA, April 10, 1946. 34 + 16 pp.

**Dolph:1993:TBL**

[DS93] C. L. Dolph and Claude E. Shannon. The transient behavior of a large number of four-terminal unilateral linear networks connected in tandem. In Sloane and Wyner [SW93k], page 870. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Bell Laboratories Memorandum, April 10, 1946. Originally published in [DS46].

**deAraujo:2003:SEA**

[dTS+03] D. B. de Araujo, W. Tedeschi, A. C. Santos, J. Elias, Jr., U. P. C. Neves, and O. Baffa. Shannon entropy applied to the analysis of event-related fMRI time series. *NeuroImage*, 20(1):311–317, ???? 2003. CODEN NEIMEF. ISSN 1053-8119 (print), 1095-9572 (electronic).

**Efron:2008:SMS**

[Efr08] Miles Efron. Shannon meets Shortz: A probabilistic model of crossword puzzle difficulty. *Journal of the American Society for Information Science and Technology: JASIST*, 59(6):875–886, April 2008. CODEN JASIEF. ISSN 1532-2882 (print), 1532-2890 (electronic).

**Elias:1956:NMF**

[EFS56] Peter Elias, Amiel Feinstein, and Claude E. Shannon. A note on the maximum flow through a network. *IRE Transactions on Information Theory*, IT-2(4):117–119, December 1956. CODEN IRITAY. ISSN 0096-1000 (print), 2168-2712 (electronic). URL `http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=1056816`.

**Elias:1993:NMF**

[EFS93] Peter Elias, Amiel Feinstein, and Claude E. Shannon. A note on the maximum flow through a network. In Sloane and Wyner [SW93k], pages 793–795. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Manuscript received by the PGIT, July 11, 1956. Originally published in [EFS56].

**Ellersick:1984:CCS**

[Ell84] F. Ellersick. A conversation with Claude Shannon. *IEEE Communications Magazine*, 22(5):123–126, May 1984. CODEN ICOMD9. ISSN 0163-6804 (print), 1558-1896 (electronic).

**Ellerman:2009:CDC**

[Ell09] David Ellerman. Counting distinctions: on the conceptual foundations of Shannon's information theory. *Synthese*, 168(1):119–149, May 2009. CODEN SYNTAE. ISSN 0039-7857 (print), 1573-0964 (electronic). URL `http://link.springer.com/article/10.1007/s11229-008-9333-7; http://link.springer.com/content/pdf/10.1007/s11229-008-9333-7.pdf`.

**Emerson:2001:CSH**

[Eme01] Andrew Emerson. Claude Shannon: His ground-breaking work on information theory, much of it laid out in his master's thesis, made today's digital revolution possible. *The Guardian*, ?? (??):??, March 8, 2001. ISSN 0261-3077 (print), 1756-3224 (electronic). URL `http://www-groups.dcs.st-and.ac.uk/history/Obits2/Shannon_Guardian.html`.

**Ephremides:2001:CS**

[Eph01] Anthony Ephremides. Claude E. Shannon 1916–2001. *IEEE Information Society Newsletter*, ??(??):??, March 2001.

**Farmelo:2002:IMB**

[Far02] Graham Farmelo, editor. *It must be beautiful: great equations of modern science*. Granta, London, UK, 2002. ISBN 1-86207-479-8. xvi + 283 pp. LCCN Q125 .I88 2002.

**Farmelo:2003:IMB**

[Far03] Graham Farmelo, editor. *It Must Be Beautiful: Great Equations of Modern Science*. Granta, London, UK, 2003. ISBN 1-86207-555-7. xviii + 284 pp. LCCN Q125 .I88 2003.

**Fleming:1969:IME**

[FB69] Donald Fleming and Bernard Bailyn, editors. *The intellectual migration: Europe and America, 1930–1960*. Belknap Press of Harvard University Press, Cambridge, MA, USA; London, UK, 1969. ISBN 0-674-33411-6, 0-674-33412-4. 748 pp. LCCN E169.1 .F6.

**Fuhrman:2000:ASE**

[FCW+00] Stefanie Fuhrman, Mary Jane Cunningham, Xiling Wen, Gary Zweiger, Jeffrey J. Seilhamer, and Roland Somogyi. The application of Shannon entropy in the identification of putative drug targets. *Biosystems (A6E)*, 55(1–3):5–14, ???? 2000. CODEN BSYMBO. ISSN 0303-2647 (print), 1872-8324 (electronic).

**Feller:1950:IPT**

[Fel66] William Feller. *An Introduction to Probability Theory and Its Applications*. Wiley mathematical statistics series. Wiley, New York, NY, USA, 1950–1966. ???? pp. LCCN QA273 .F45 1950; QA273 .F37.

**Feller:2009:IPT**

[Fel09] William Feller. *An introduction to probability theory and its applications: volume I*. Wiley series in probability and mathematical statistics. Probability and mathematical statistics. Wiley-India, New Delhi, India, third edition, 2009. ISBN 81-265-1805-7. xviii + 509 pp. LCCN QA273 .F3713.

**Feller:1957:IPT**

[Fel71] William Feller. *An introduction to probability theory and its applications*. A Wiley publication in mathematical statistics. Wiley, New York, NY, USA, second edition, 1957-71. ISBN 0-471-25709-5 (vol. 2). ???? pp. LCCN QA273 .F3712. URL `http://www.loc.gov/catdir/toc/onix01/57010805.html`.

**Frize:2009:BBH**

[FFF09] Monique Frize, Peter R. D. Frize, and Nadine Faulkner. *The bold and the brave: a history of women in science and engineering*. University of Ottawa Press, Ottawa, ON, Canada, 2009. ISBN 0-7766-0725-1. xvi + 348 pp. LCCN Q130 .F765 2009.

**Favalli:1999:DSC**

[FM99] Michele Favalli and Cecilia Metra. On the design of self-checking functional units based on Shannon circuits. In *Proceedings of the Conference on Design, Automation and Test in Europe*, DATE '99. ACM Press, New York, NY 10036, USA, 1999. ISBN 1-58113-121-6. URL `http://doi.acm.org/10.1145/307418.307524`.

**Frappat:2003:USE**

[FMSS03] L. Frappat, C. Minichini, A. Sciarrino, and P. Sorba. Universality and Shannon entropy of codon usage. *Physical Review E*

*(Statistical physics, plasmas, fluids, and related interdisciplinary topics)*, 68(6 Pt 1):061910, December 2003. CODEN PLEEE8. ISSN 1539-3755 (print), 1550-2376 (electronic).

**Feller:1943:IBE**

[FS43] W. Feller and Claude E. Shannon. On the integration of the ballistic equations on the Aberdeen Analyzer. Applied Mathematics Panel Report, National Defense Research Committee 28.1, Bell Laboratories, Murray Hill, NJ, USA, July 15, 1943.

**Gage:1998:CST**

[Gag98] J. S. Gage. Claude Shannon, the theory of encryption, and patient confidentiality. *M.D. Computing: Computers in Medical Practice*, 15(1):28–30, January/February 1998. CODEN MDCOE7. ISSN 0724-6811. URL `https://www.ncbi.nlm.nih.gov/pubmed/9458660`.

**Gallager:2001:CSR**

[Gal01] Robert G. Gallager. Claude E. Shannon: A retrospective on his life, work, and impact. *IEEE Transactions on Information Theory*, 47(7):2681–2695, November 2001. CODEN IETTAW. ISSN 0018-9448 (print), 1557-9654 (electronic). URL `http://ieeexplore.ieee.org/document/959253/`.

**Gallager:2003:CES**

[Gal03] Robert G. Gallager. Claude Elwood Shannon, 30 April 1916–24 February 2001. *Proceedings of the American Philosophical Society held at Philadelphia for promoting useful knowledge*, 147 (2):187–191, June 2003. CODEN PAPCAA. ISSN 0003-049X (print), 2326-9243 (electronic). URL `http://www.amphilsoc.org/sites/default/files/212.pdf; https://www.jstor.org/stable/1558263`.

**Gallager:2006:IIT**

[Gal06] Robert G. Gallager. The impact of information theory onf information technology. Lecture slides, February 28, 2006.

**Godden:2000:SEN**

[GB00] J. W. Godden and J. Bajorath. Shannon entropy — a novel concept in molecular descriptor and diversity analysis. *Journal of molecular graphics & modelling*, 18(1):73–76, February 2000. ISSN 1093-3263.

**Godden:2001:DSE**

[GB01] J. W. Godden and J. Bajorath. Differential Shannon entropy as a sensitive measure of differences in database variability of molecular descriptors. *Journal of Chemical Information and Computer Sciences*, 41(4):1060–1066, ???? 2001. CODEN JCISD8. ISSN 0095-2338 (print), 1520-5142 (electronic).

**Golomb:2002:CES**

[GBC+02] Solomon W. Golomb, Elwyn Berlekamp, Thomas M. Cover, Robert G. Gallager, James L. Massey, and Andrew J. Viterbi. Claude Elwood Shannon (1916–2001). *Notices of the American Mathematical Society*, 49(1):8–16, January 2002. CODEN AMNOAN. ISSN 0002-9920 (print), 1088-9477 (electronic). URL `http://www.ams.org/notices/200201/fea-shannon.pdf`.

**Ghosh:2007:LPT**

[GBR07] Swaroop Ghosh, Swarup Bhunia, and Kaushik Roy. Low-power and testable circuit synthesis using Shannon decomposition. *ACM Transactions on Design Automation of Electronic Systems (TODAES)*, 12(4):47:1–47:??, September 2007. CODEN ATASFO. ISSN 1084-4309 (print), 1557-7309 (electronic).

**Gertner:2012:IFB**

[Ger12] Jon Gertner. *The Idea Factory: Bell Labs and the Great Age of American Innovation*. Penguin Press, New York, NY, USA, 2012. ISBN 1-59420-328-8. 422 pp. LCCN TK5102.3.U6 G47 2012.

**Gonzalez-Ferez:2003:SEI**

[GFD03] R. Gonzalez-Ferez and J. S. Dehesa. Shannon entropy as an indicator of atomic avoided crossings in strong parallel magnetic and electric fields. *Physical Review Letters*, 91(11):113001, September 12, 2003. CODEN PRLTAO. ISSN 0031-9007 (print), 1079-7114 (electronic), 1092-0145.

**Ganesan:2013:BES**

[GKL+13] Anand N. Ganesan, Pawel Kuklik, Dennis H. Lau, Anthony G. Brooks, Mathias Baumert, Wei Wen Lim, Shivshankar Thanigaimani, Sachin Nayyar, Rajiv Mahajan, Jonathan M. Kalman, Kurt C. Roberts-Thomson, and Prashanthan Sanders. Bipolar electrogram Shannon entropy at sites of rotational activation: implications for ablation of atrial fibrillation. *Circulation: Arrhyth-*

*mia and Electrophysiology*, 6(1):48–57, February 2013. CODEN CIRCC3. ISSN 1941-3084 (print), 1941-3149 (electronic).

**Golay:1949:NDC**

[Gol49] Marcel J. E. Golay. Notes on digital coding. *Proceedings of the Institute of Radio Engineers*, 37(??):657, June 1949. CODEN PIREAE. ISSN 0096-8390 (print), 2162-6634 (electronic). URL `http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=1698056`.

**Golomb:2001:RCS**

[Gol01] Solomon W. Golomb. Retrospective: Claude E. Shannon (1916–2001). *Science*, 292(5516):455, April 20, 2001. CODEN SCIEAS. ISSN 0036-8075 (print), 1095-9203 (electronic). URL `http://science.sciencemag.org/content/292/5516/455`.

**Gorelick:2006:CRA**

[Gor06] Root Gorelick. Combining richness and abundance into a single diversity index using matrix analogues of Shannon's and Simpson's indices. *Ecography*, 29(4):525–530, ???? 2006. ISSN 0906-7590.

**Gregori-Puigjane:2006:SSE**

[GPM06] Elisabet Gregori-Puigjane and Jordi Mestres. SHED: Shannon entropy descriptors from topological feature distributions. *Journal of Chemical Information and Modeling*, 46(4):1615–1622, ???? 2006. CODEN JCISD8. ISSN 1549-9596 (print), 1549-960X (electronic).

**Guizzo:2003:EMC**

[Gui03] Erico Marui Guizzo. The essential message: Claude Shannon and the making of information theory. Thesis (s.m. in science writing), Department of Humanities, Program in Writing and Humanistic Studies, Massachusetts Institute of Technology, Cambridge, MA¡ USA, 2003. 77 pp. URL `http://dspace.mit.edu/handle/1721.1/39429`.

**Guizzo:2004:CPC**

[Gui04] Erico Guizzo. Closing in on the perfect code [turbo codes]. *IEEE Spectrum*, 41(3):36–42, March 2004. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). URL `https://spectrum.ieee.org/computing/software/closing-in-on-the-perfect-code`.

**Guruswami:2015:ESI**

[GV15] Venkatesan Guruswami and Ameya Velingker. An entropy sumset inequality and polynomially fast convergence to Shannon capacity over all alphabets. In *Proceedings of the 30th Conference on Computational Complexity*, CCC '15, pages 42–57. Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik, Germany, 2015. ISBN 3-939897-81-7.

**Gong:2012:CSI**

[GWZC12] Longyan Gong, Ling Wei, Shengmei Zhao, and Weiwen Cheng. Comparison of Shannon information entropies in position and momentum space for an electron in one-dimensional nonuniform systems. *Physical Review E (Statistical physics, plasmas, fluids, and related interdisciplinary topics)*, 86(6 Pt 1):061122, December 2012. CODEN PLEEE8. ISSN 1550-2376.

**Hagemeyer:1979:EIN**

[Hag79] Friedrich-Wilhelm Hagemeyer. *Die Entstehung von Informationskonzepten in der Nachrichtentechnik: eine Fallstudie zur Theoriebildung in der Technik in Industrie- und Kriegsforschung. (German) [Communication Technology: Case Study for Engineering Theory-Building in Industrial and Military Research]*. Doctoral dissertation, Freie Universität, Berlin, Germany, 1979. 569 pp.

**Han:2010:CSA**

[Han10] Te Sun Han. Claude E. Shannon award lecture. In *2010 IEEE International Symposium on Information Theory*, pages xliv–xlv. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, June 2010.

**Hamill:1996:RDS**

[HDC96] J. Hamill, T. R. Derrick, and G. E. Caldwell. Reconstructing digital signals using the Shannon sampling theorem algorithm. *Medicine and Science in Sports and Exercise*, 28(5 SUPPL.):S47, ???? 1996. ISSN 0195-9131.

**Homs:2012:UDP**

[HGR+12] Maria Homs, Josep Gregori, Clara Ramirez, Maria Buti, Josep Quer, Silvia Camos, David Tabernero, Rafael Esteban, and Francisco Rodriguez-Frias. Ultra-deep pyrosequencing and Shannon entropy to analyze the effect of natural evolution and treatment resistance on mutations in the hepatitis b virus quasispecies. *Hepatology*, 56(1S):433A–434A, ???? 2012.

**Higginbotham:1963:MTC**

[Hig63] Sanford W. Higginbotham, editor. *Science, Learning and Education. The Semicentennial Lectures at Rice University*, volume 49 (supplement 2) of *Rice University Studies*. Rice University Press, Houston, TX, USA, 1963. xiv + 254 pp. LCCN ????

**Hakala:2009:MLD**

[HN09] Risto M. Hakala and Kaisa Nyberg. A multidimensional linear distinguishing attack on the Shannon cipher. *International Journal of Applied Cryptography. IJACT*, 1(3):161–168, 2009. CODEN ???? ISSN 1753-0563 (print), 1753-0571 (electronic).

**Horgan:1990:CS**

[Hor90] John Horgan. Claude E. Shannon: Unicyclist, juggler, and father of information theory. *Scientific American*, 262(1):22–22B, January 1990. CODEN SCAMAC. ISSN 0036-8733 (print), 1946-7087 (electronic). URL `http://www.nature.com/scientificamerican/journal/v262/n1/pdf/scientificamerican0190-22.pdf`.

**Horgan:1992:CSP**

[Hor92] J. Horgan. Claude E. Shannon [profile]. *IEEE Spectrum*, 29(4): 72–75, April 1992. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

**Horgan:2011:PMC**

[Hor11] John Horgan. Poetic masterpiece of Claude Shannon, father of information theory, published for the first time. Scientific American blog, March 28, 2011. URL `https://blogs.scientificamerican.com/cross-check/poetic-masterpiece-of-claude-shannon-father-of-information-theory-published-for-the-first-time/`.

**Holbrook:1946:SCP**

[HS46] B. D. Holbrook and Claude E. Shannon. A sender circuit for panel or crossbar telephone systems. US Patent application, 1946. Application dropped April 13, 1948.

**Hagelbarger:1954:RLO**

[HS54] D. W. Hagelbarger and Claude E. Shannon. A relay laboratory outfit for colleges. Memorandum MM 54-114-17, Bell Laboratories, Murray Hill, NJ, USA, January 10, 1954.

**Hagelbarger:1993:RLO**

[HS93] D. W. Hagelbarger and Claude E. Shannon. A relay laboratory outfit for colleges. In Sloane and Wyner [SW93k], pages 715–726. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Bell Laboratories Memorandum, Jan. 10, 1954. Originally published in [HS54].

**Hulata:2002:MSS**

[HSBJ02] Eyal Hulata, Ronen Segev, and Eshel Ben-Jacob. A method for spike sorting and detection based on wavelet packets and Shannon's mutual information. *Journal of Neuroscience Methods*, 117 (1):1–12, ???? 2002. CODEN JNMEDT. ISSN 0165-0270 (print), 1872-678X (electronic).

**Hunt:2023:RSS**

[HSS23] Sebastian Hunt, David Sands, and Sandro Stucki. Reconciling Shannon and Scott with a lattice of computable information. *Proceedings of the ACM on Programming Languages (PACMPL)*, 7 (POPL):68:1–68:??, January 2023. CODEN ???? ISSN 2475-1421 (electronic). URL `https://dl.acm.org/doi/10.1145/3571740`.

**Humeau:2008:FIS**

[HTR+08] Anne Humeau, Wojciech Trzepizur, David Rousseau, François Chapeau-Blondeau, and Pierre Abraham. Fisher information and Shannon entropy for on-line detection of transient signal high-values in laser Doppler flowmetry signals of healthy subjects. *Physics in Medicine and Biology*, 53(18):5061–5076, ???? 2008. CODEN PHMBA7. ISSN 0031-9155 (print), 1361-6560 (electronic).

**Hariri:1990:VSI**

[HWO90] Ali Hariri, Bruce Weber, and John Olmsted III. On the validity of Shannon information calculations for molecular biological sequences. *Journal of Theoretical Biology*, 147(2):235–254, November 21, 1990. CODEN JTBIAP. ISSN 0022-5193 (print), 1095-8541 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0022519305800542`.

**Ibanez:2000:PSL**

[ID00] J. J. Ibanez and S. De Alba. Pedodiversity and scaling laws: Sharing Martin and Rey's opinion on the role of the Shannon index as a

measure of diversity. *Geoderma*, 98(1–2):5–9, ???? 2000. CODEN GEDMAB. ISSN 0016-7061 (print), 1872-6259 (electronic).

**ISCIA:2003:TG**

[Int03] IntoIT Standing Committee on IT Audit. 1 + 1 = 1: A tale of genius. *IntoIT*, 18(??):52–57, ???? 2003.

**James:2009:CES**

[Jam09] Ioan James. Claude Elwood Shannon: 30 April 1916—24 February 2001. *Biographical Memoirs of Fellows of the Royal Society*, 55: 257–265, 2009. CODEN BMFRA3. ISSN 0080-4606 (print), 1748-8494 (electronic).

**James:2010:RER**

[Jam10] I. M. (Ioan Mackenzie) James. *Remarkable engineers: from Riquet to Shannon*. Cambridge University Press, Cambridge, UK, 2010. ISBN 0-521-51621-8 (hardcover), 0-521-73165-8 (paperback). xv + 201 pp. LCCN TA139 .J36 2010.

**Jankvist:2014:HTM**

[Jan14] Uffe Thomas Jankvist. A historical teaching module on 'the unreasonable effectiveness of mathematics': Boolean algebra and Shannon circuits. *BSHM Bulletin: Journal of the British Society for the History of Mathematics*, 29(2):120–133, 2014. CODEN ???? ISSN 1749-8430 (print), 1749-8341 (electronic). URL `http://www.tandfonline.com/doi/full/10.1080/17498430.2014.874869`.

**Jhingran:1989:ASW**

[JAS89] V. G. Jhingran, S. H. Ahmad, and A. K. Singh. Application of Shannon–Wiener index as a measure of Pollution of River Ganga at Patna, Bihar, India. *Current Science (Bangalore)*, 58(13):717–720, ???? 1989. ISSN 0011-3891.

**Jackson:2000:VSI**

[JGH00] Julius H. Jackson, Roy George, and Patricia A. Herring. Vectors of Shannon information from Fourier signals characterizing base periodicity in genes and genomes. *Biochemical and Biophysical Research Communications*, 268(2):289–292, ???? 2000. CODEN BBRCA9. ISSN 0006-291x (print), 1090-2104 (electronic).

**Johnson:2001:CSM**

[Joh01] George Johnson. Claude Shannon, mathematician, dies at 84. *New York Times*, ??(??):B7, February 27, 2001. CODEN NY-

TIAO. ISSN 0362-4331 (print), 1542-667X, 1553-8095. URL `http://www.nytimes.com/2001/02/27/nyregion/claude-shannon-mathematician-dies-at-84.html; https://courses.dce.harvard.edu/~cscie55/27SHAN.html; https://search.proquest.com/hnpnewyorktimes/docview/92175407/`.

**Jozi:2012:ISE**

[JSMS12] S. A. Jozi, M. Shafiee, N. MoradiMajd, and S. Saffarian. An integrated Shannon's entropy-TOPSIS methodology for environmental risk assessment of helleh protected area in Iran. *Environmental Monitoring and Assessment*, 184(11):6913–6922, ???? 2012. CODEN EMASDH. ISSN 0167-6369 (print), 1573-2959 (electronic).

**Jiankang:1998:TSS**

[JZL98] Zhang Jiankang, Bao Zheng, and Jiao Licheng. Transformation of Shannon's sampling points into Daubechies' wavelet sampling points. In *ICSP '98. 1998 Fourth International Conference on Signal Processing*, pages 305–308. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1998. IEEE catalog number 98TH8344.

**Kahn:1984:COS**

[Kah84] David Kahn. Cryptology and the origins of spread spectrum: Engineers during World War II developed an unbreakable scrambler to guarantee secure communications between Allied leaders; actress Hedy Lamarr played a role in the technology. *IEEE Spectrum*, 21(9):70–80, September 1984. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

**Keylock:2005:SDS**

[Key05] C. J. Keylock. Simpson diversity and the Shannon–Wiener index as special cases of a generalized entropy. *Oikos*, 109(1):203–207, ???? 2005. CODEN OIKSAA. ISSN 0030-1299 (print), 1600-0706 (electronic).

**Khatuntseva:2016:CSA**

[Kha16] M. V. Khatuntseva. The Claude E. Shannon Award. *Theory of Probability and its Applications*, 60(3):501, ???? 2016. CODEN TPRBAU. ISSN 0040-585X (print), 1095-7219 (electronic).

**Khamis:2017:WDS**

[KNS17] Mahmoud Abo Khamis, Hung Q. Ngo, and Dan Suciu. What do Shannon-type inequalities, submodular width, and disjunctive

datalog have to do with one another? In *Proceedings of the 36th ACM SIGMOD-SIGACT-SIGAI Symposium on Principles of Database Systems*, PODS '17, pages 429–444. ACM Press, New York, NY 10036, USA, 2017. ISBN 1-4503-4198-5. URL `http://doi.acm.org/10.1145/3034786.3056105`.

**Kochel:2005:KOM**

[Koc05] Bonawentura Kochel. kth-order Markov chain-based approximation of the Shannon entropy of Gaussian photon-counting processes (vol 33, pg 1494, 2004). *Kybernetes*, 34(3–4):582, ???? 2005. ISSN 0368-492X.

**Korner:1996:PC**

[Kör96] T. W. (Thomas William) Körner. *The Pleasures of Counting*. Cambridge University Press, Cambridge, UK, 1996. ISBN 1-107-05056-1 (e-book), 0-521-56823-4, 0-521-56087-X, 1-316-02367-2. x + 534 pp. LCCN QA93 .K65 1996. URL `http://catdir.loc.gov/catdir/description/cam029/97108334.html; http://catdir.loc.gov/catdir/toc/cam027/97108334.html`.

**Kovacevic:2020:SRO**

[Kov20] Mladen Kovacevic. Signaling to relativistic observers: an Einstein–Shannon–Riemann encounter. *Problems of Information Transmission*, 56(4):303–308, ???? 2020. CODEN PRITA9. ISSN 0032-9460 (print), 1608-3253 (electronic). URL `https://dblp.org/db/journals/poit/poit56.html#Kovacevic20`.

**Krakovsky:2021:NTH**

[Kra21] Marina Krakovsky. News: Taking the heat: Maxwell's demon and the high cost of erasure. *Communications of the ACM*, 64(6):18–20, June 2021. CODEN CACMA2. ISSN 0001-0782 (print), 1557-7317 (electronic). URL `https://dl.acm.org/doi/10.1145/3460214`.

**Laplante:1996:GPC**

[Lap96] Phillip Laplante, editor. *Great Papers in Computer Science*. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1996. ISBN 0-314-06365-X (paperback), 0-7803-1112-4 (hardcover). iv + 717 pp. LCCN QA76 .G686 1996. URL `http://bit.csc.lsu.edu/~chen/GreatPapers.html`.

**Leinweber:2008:FGS**

[LB08] Lawrence Leinweber and Swarup Bhunia. Fine-grained supply gating through hypergraph partitioning and Shannon decompo-

sition for active power reduction. In *Proceedings of the Conference on Design, Automation and Test in Europe*, DATE '08, pages 373–378. ACM Press, New York, NY 10036, USA, 2008. ISBN 3-9810801-3-0. URL http://doi.acm.org/10.1145/1403375.1403466.

**Liu:2016:EQD**

[LCW+16] Yang Liu, Zhu Cao, Cheng Wu, Daiji Fukuda, Lixing You, Jiaqiang Zhong, Takayuki Numata, Sijing Chen, Weijun Zhang, Sheng-Cai Shi, Chao-Yang Lu, Zhen Wang, Xiongfeng Ma, Jingyun Fan, Qiang Zhang, and Jian-Wei Pan. Experimental quantum data locking. *Physical Review A (Atomic, Molecular, and Optical Physics)*, 94(2):020301, August 2016. CODEN PLRAAN. ISSN 1050-2947 (print), 1094-1622, 1538-4446, 1538-4519. URL http://link.aps.org/doi/10.1103/PhysRevA.94.020301.

**Leijon:2007:AIS**

[Lei07] Arne Leijon. Articulation index and Shannon mutual information. In B. Kollmeier, V. Hohmann, M. Mauermann, J. Verhey, G. Klump, U. Langemann, and S. Uppenkamp, editors, *Hearing — From Sensory Processing To Perception*, pages 525–532. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2007. ISBN 3-540-73008-7 (hardcover). LCCN ????

**Letellier:2006:ESE**

[Let06] Christophe Letellier. Estimating the Shannon entropy: recurrence plots versus symbolic dynamics. *Physical Review Letters*, 96(25):254102, June 30, 2006. CODEN PRLTAO. ISSN 0031-9007 (print), 1079-7114 (electronic), 1092-0145. URL https://journals.aps.org/prl/abstract/10.1103/PhysRevLett.96.254102.

**Levy:1988:CCC**

[Lev88] David N. L. Levy. *Computer chess compendium*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 1988. ISBN 0-387-91331-9. 440 pp. LCCN GV1449.3 .L47 1988.

**Lewbel:2001:PTC**

[Lew01] Arthur Lewbel. A personal tribute to Claude Shannon. Web blog., March 2001. URL http://web.archive.org/web/20161101044247/https://www2.bc.edu/~lewbel/Shannon.html; http://www2.bc.edu/~lewbel/Shannon.html.

**Lewis:2021:ICF**

[Lew21] Harry R. Lewis. *Ideas That Created the Future: Classic Papers of Computer Science*. MIT Press, Cambridge, MA, USA, 2021. ISBN 0-262-04530-3. xxii + 495 pp. LCCN Q124.6-127.2.

**Lum:2016:QEM**

[LHA+16] Daniel J. Lum, John C. Howell, M. S. Allman, Thomas Gerrits, Varun B. Verma, Sae Woo Nam, Cosmo Lupo, and Seth Lloyd. Quantum Enigma machine: Experimentally demonstrating quantum data locking. *Physical Review A (Atomic, Molecular, and Optical Physics)*, 94(2):022315, August 2016. CODEN PLRAAN. ISSN 1050-2947 (print), 1094-1622, 1538-4446, 1538-4519. URL `http://link.aps.org/doi/10.1103/PhysRevA.94.022315`.

**Lombardi:2016:WSI**

[LHV16] Olimpia Lombardi, Federico Holik, and Leonardo Vanni. What is Shannon information? *Synthese*, 193(7):1983–2012, July 2016. CODEN SYNTAE. ISSN 0039-7857 (print), 1573-0964 (electronic). URL `http://link.springer.com/article/10.1007/s11229-015-0824-z; http://link.springer.com/content/pdf/10.1007/s11229-015-0824-z.pdf`.

**Liu:2007:RBD**

[Liu07] Shubin Liu. On the relationship between densities of Shannon entropy and Fisher information for atoms and molecules. *Journal of Chemical Physics*, 126(19):191107, May 21, 2007. CODEN JCPSA6. ISSN 0021-9606 (print), 1089-7690 (electronic).

**Lorenzo:2003:BCB**

[LM03] Luis Lorenzo and Ricardo A. Mosquera. A box-counting-based algorithm for computing Shannon entropy in molecular dynamics simulations. *Journal of Computational Chemistry*, 24(6):707–713, April 30, 2003. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987x (electronic).

**Lee:2011:AFD**

[LMC11] J. Lee, D. McManus, and K. Chon. Atrial fibrillation detection using time-varying coherence function and Shannon entropy. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBC*, 2011(??):4685–4688, ???? 2011. ISSN 1557-170X.

**Loeb:1959:CAS**

[Loe59] Julien Loeb. Le calcul de l'ambiguité de Shannon en code binaire. (French) [Calculation of the Shannon ambiguity in binary code]. *Synthese*, 11(2):112–118, June 1959. CODEN SYNTAE. ISSN 0039-7857 (print), 1573-0964 (electronic). URL `http://link.springer.com/article/10.1007/BF00485571`.

**Lombardi:2005:DST**

[Lom05] O. Lombardi. Dretske, Shannon's theory and the interpretation of information. *Synthese*, 144(1):23–39, March 2005. CODEN SYNTAE. ISSN 0039-7857 (print), 1573-0964 (electronic). URL `http://link.springer.com/article/10.1007/s11229-005-9127-0; http://link.springer.com/content/pdf/10.1007/s11229-005-9127-0.pdf`.

**Leclercq:2012:DFH**

[LP12] Mathieu Leclercq and Pascal Picart. Digital Fresnel holography beyond the Shannon limits. *Optics Express*, 20(16):18303–18312, July 30, 2012. CODEN OPEXFF. ISSN 1094-4087.

**Lopez-Ruiz:2005:SIL**

[LR05] Ricardo Lopez-Ruiz. Shannon information, LMC complexity and Renyi entropies: a straightforward approach. *Biophysical Chemistry*, 115(2–3):215–218, April 1, 2005. CODEN BICIAZ. ISSN 0301-4622 (print), 1873-4200 (electronic).

**Livingston:1935:PSE**

[LS35] G. R. Livingston and Claude Shannon. Problems and Solutions: Elementary Problems: Solutions: E100. *American Mathematical Monthly*, 42(1):45, January 1935. CODEN AMMYAE. ISSN 0002-9890 (print), 1930-0972 (electronic). URL `2-J&origin=MSN; http://links.jstor.org/sici?sici=0002-9890(193501)42:1<45:E>2.0.CO`.

**Lori:2010:USI**

[LS10] Nicolas F. Lori and Carlos Santos. Use of Shannon information in treatment of high resolution diffusion MRI. *Conference proceedings : ... Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society. Conference*, 2010(??):2714–2717, ???? 2010. ISSN 1557-170X.

**Lucky:2012:MSR**

[Luc12] Robert Lucky. Is math still relevant? [reflections]. *IEEE Spectrum*, 49(3):23, March 2012. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). URL `https://ieeexplore.ieee.org/document/6156859`.

**Lynch:1977:VGR**

[Lyn77] Michael F. Lynch. Variety generation — a reinterpretation of Shannon's mathematical theory of communication, and its implications for information science. *Journal of the American Society for Information Science*, 28(1):19–25, January 1977. CODEN AISJB6. ISSN 0002-8231 (print), 1097-4571 (electronic).

**Marks:1991:ISS**

[Mar91] Robert J. Marks. *Introduction to Shannon sampling and interpolation theory*. Springer texts in electrical engineering. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 1991. ISBN 0-387-97391-5, 3-540-97391-5. xiii + 324 pp. LCCN TK5102.9 .M37 1991.

**Marks:1993:ATS**

[Mar93] Robert J. Marks, editor. *Advanced topics in Shannon sampling and interpolation theory*. Springer texts in electrical engineering. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 1993. ISBN 0-387-97906-9, 3-540-97906-9. xi + 360 pp. LCCN TK5102.5 .A3325 1993; TK5102.5.A3325.

**Markhasin:2008:SBL**

[Mar08] Alexander B. Markhasin. Shannon bounds for large-scale wireless MAC's potential capacity in presence of errors. In *Proceedings of the 11th International Symposium on Modeling, Analysis and Simulation of Wireless and Mobile Systems*, MSWiM '08, pages 169–176. ACM Press, New York, NY 10036, USA, 2008. ISBN 1-60558-235-2. URL `http://doi.acm.org/10.1145/1454503.1454536`.

**Matricciani:1994:SEM**

[Mat94] E. Matricciani. Shannon's entropy as a measure of the "life" of the literature of a discipline. *Scientometrics*, 30(1):129–145, May 1994. CODEN SCNTDX. ISSN 0138-9130 (print), 1588-2861 (electronic). URL `http://link.springer.com/article/10.1007/BF02017218`.

**Mueller:2003:SMI**

[MBD+03] J. C. Mueller, E. Bresch, Z. Dawy, T. Bettecken, T. Meitinger, and J. Hagenauer. Shannon's mutual information applied to population-based gene mapping. *American journal of human genetics*, 73(5):610, ???? 2003. CODEN AJHGAG. ISSN 0002-9297 (print), 1537-6605 (electronic).

**Marcon:2012:DSE**

[MHBL12] Eric Marcon, Bruno Herault, Christopher Baraloto, and Gabriel Lang. The decomposition of Shannon's entropy and a confidence interval for beta diversity. *Oikos*, 121(4):516–522, ???? 2012. CODEN OIKSAA. ISSN 0030-1299 (print), 1600-0706 (electronic).

**Mindell:1995:AFH**

[Min95] David A. Mindell. Automation's finest hour: Bell Labs and automatic control in WWII. *IEEE Control Systems Magazine*, 15 (6):72–80, December 1995. CODEN ISMAD7. ISSN 1066-033X (print), 1941-000X (electronic). URL `http://ieeexplore.ieee.org/document/476388/`.

**Mindell:2002:BHM**

[Min02] David A. Mindell. *Between human and machine: feedback, control, and computing before cybernetics*. Johns Hopkins studies in the history of technology. The Johns Hopkins University Press, Baltimore, MD, USA, 2002. ISBN 0-8018-6895-5. xiv + 439 pp. LCCN QA76.17 .M46 2002. URL `http://www.loc.gov/catdir/bios/jhu051/2001004203.html; http://www.loc.gov/catdir/description/jhu051/2001004203.html; http://www.loc.gov/catdir/toc/fy034/2001004203.html`.

**McCarthy:2006:PDS**

[MMS06] John McCarthy, Marvin L. Minsky, and Claude E. Shannon. A proposal for the Dartmouth summer research project on artificial intelligence, August 31, 1955. *The AI Magazine*, 27 (4):12–14, Winter 2006. CODEN AIMAEK. ISSN 0738-4602. URL `http://www.aaai.org/ojs/index.php/aimagazine/article/view/1904`.

**Menendez:1997:JSD**

[MPPP97] M. L. Menéndez, J. A. Pardo, L. Pardo, and M. C. Pardo. The Jensen–Shannon divergence. *Journal of The Franklin Institute*, 334(2):307–318, March 1997. CODEN JFINAB. ISSN 0016-0032 (print), 1879-2693 (electronic).

**Moore:1953:ECA**

[MS53a] E. F. Moore and Claude E. Shannon. Electrical circuit analyzer. US Patent 2,776,405., 1953. Filed May 18, 1953, granted January 1, 1957.

**Moore:1953:RCA**

[MS53b] E. F. Moore and Claude E. Shannon. The relay circuit analyzer. Memorandum MM 53-1400-9, Bell Laboratories, Murray Hill, NJ, USA, March 31, 1953. 14 + 4 pp.

**Moore:1953:RCS**

[MS53c] E. F. Moore and Claude E. Shannon. The relay circuit synthesizer. Memorandum MM 53-140-52, Bell Laboratories, Murray Hill, NJ, USA, November 30, 1953.

**Moore:1954:RCU**

[MS54] Edward F. Moore and Claude E. Shannon. Reliable circuits using crummy relays. Memorandum 54-114-42, Bell Laboratories, Murray Hill, NJ, USA, November 29, 1954. Published in [MS56a, MS56b].

**Moore:1956:RCUa**

[MS56a] E. F. Moore and C. E. Shannon. Reliable circuits using less reliable relays. I. *Journal of The Franklin Institute*, 262(3):191–208, September 1956. CODEN JFINAB. ISSN 0016-0032 (print), 1879-2693 (electronic).

**Moore:1956:RCUb**

[MS56b] E. F. Moore and C. E. Shannon. Reliable circuits using less reliable relays. II. *Journal of The Franklin Institute*, 262(4):281–297, October 1956. CODEN JFINAB. ISSN 0016-0032 (print), 1879-2693 (electronic).

**Moore:1993:RCUa**

[MS93a] E. F. Moore and C. E. Shannon. Reliable circuits using less reliable relays. I. In Sloane and Wyner [SW93k], pages 796–813. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [MS56a].

**Moore:1993:RCUb**

[MS93b] E. F. Moore and C. E. Shannon. Reliable circuits using less reliable relays. II. In Sloane and Wyner [SW93k], pages 814–830. ISBN 0-

470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [MS56b].

**Moore:1993:RCA**

[MS93c] E. F. Moore and Claude E. Shannon. The relay circuit analyzer. In Sloane and Wyner [SW93k], page 875. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Bell Laboratories Memorandum, March 31, 1953. Originally published in [MS53b].

**Moore:1993:RCS**

[MS93d] E. F. Moore and Claude E. Shannon. The relay circuit synthesizer. In Sloane and Wyner [SW93k], page 876. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Bell Laboratories Memorandum, Nov. 30, 1953. Originally published in [MS53c].

**Murray:1957:BRA**

[Mur57] F. J. Murray. Book review: *Automata studies*: edited by C. E. Shannon and J. McCarthy. 285 pages, $7 \times 10$ in. Princeton, Princeton University Press, 1956. Price, $4.00. *Journal of The Franklin Institute*, 263(2):166–167, February 1957. CODEN JFINAB. ISSN 0016-0032 (print), 1879-2693 (electronic).

**Nahin:2013:LEH**

[Nah13] Paul J. Nahin. *The logician and the engineer: how George Boole and Claude Shannon created the information age*. Princeton University Press, Princeton, NJ, USA, 2013. ISBN 0-691-15100-8 (hardcover). ix + 228 pp. LCCN QA28 N34 2013.

**Newman:1956:WMS**

[New56] James R. Newman. *The world of mathematics: a small library of the literature of mathematics from A'h-mose the Scribe to Albert Einstein*. G. Allen, London, UK, 1956. xviii + 2535 pp. LCCN ???? Four volumes.

**Noorizadeh:2010:SEN**

[NS10] Siamak Noorizadeh and Ehsan Shakerzadeh. Shannon entropy as a new measure of aromaticity, Shannon aromaticity. *Physical Chemistry Chemical Physics: PCCP*, 12(18):4742–4749, May 14, 2010. CODEN PPCPFQ. ISSN 1463-9084.

**Narayanan:2012:SEB**

[NS12] K. R. Narayanan and A. R. Srinivasa. Shannon-entropy-based nonequilibrium "entropic" temperature of a general distribution.

*Physical Review E (Statistical physics, plasmas, fluids, and related interdisciplinary topics)*, 85(3 Pt 1):031151, March 2012. CODEN PLEEE8. ISSN 1550-2376.

**Novak:1994:DKM**

[NWV94] Mirek Novak, Niclas Wadströmer, and Krister Valtonen. *Djingis Khan möter Claude Shannon eller "Tentaexpertens skräck". (Swedish) [ Genghis Khan meets Claude Shannon, or Exam Expert's fear]*, volume 1655 of *LiTH-ISY-R*. Universität Linköping, Linköping, Sweden, 1994. ISSN 1400-3902. 63 pp. LCCN ????

**Nyquist:1924:CFA**

[Nyq24] Harry Nyquist. Certain factors affecting telegraph speed. *The Bell System Technical Journal*, 3(2):324–346, April 1924. CODEN BSTJAN. ISSN 0005-8580. URL `http://bstj.bell-labs.com/BSTJ/images/Vol03/bstj3-2-324.pdf; http://www.alcatel-lucent.com/bstj/vol03-1924/articles/bstj3-2-324.pdf`.

**Nyquist:1928:CTT**

[Nyq28] Harry Nyquist. Certain topics in telegraph transmission theory. *Transactions of the American Institute of Electrical Engineers*, 47 (2):617–644, April 1928. CODEN TAEEA5. ISSN 0096-3860. URL `http://ieeexplore.ieee.org/document/5055024/`.

**Oliver:1948:PP**

[OPS48] B. M. Oliver, J. R. Pierce, and Claude E. Shannon. The philosophy of PCM. *Proceedings of the Institute of Radio Engineers*, 36 (11):1324–1331, ???? 1948. CODEN PIREAE. ISSN 0096-8390 (print), 2162-6634 (electronic). URL `http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=1697556`.

**Oliver:1993:PP**

[OPS93] B. M. Oliver, J. R. Pierce, and Claude E. Shannon. The philosophy of PCM. In Sloane and Wyner [SW93k], pages 151–159. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Decimal classification: R148.6. Original manuscript received by the Institute, May 24, 1948. Originally published in [OPS48].

**ORegan:2012:AT**

[O'R12] Gerard (Cornelius Gerard) O'Regan. Claude Shannon. In Gerard (Cornelius Gerard) O'Regan, editor, *A Brief History of Computing*, chapter 13, pages 209–218. Springer-Verlag, Berlin, Ger-

many / Heidelberg, Germany / London, UK / etc., 2012. ISBN 1-4471-2358-1. LCCN ???? URL http://www.springerlink.com/content/978-1-4471-2358-3/; http://www.springerlink.com/content/k243537142501334/.

**Oliver:1944:CPC**

[OS44] B. M. Oliver and Claude E. Shannon. Circuits for a P.C.M. transmitter and receiver. Memorandum MM 44-110-37, Bell Laboratories, Murray Hill, NJ, USA, June 1, 1944. 4 + 11 pp.

**Oliver:1946:CSE**

[OS46] B. M. Oliver and Claude E. Shannon. Communication system employing pulse code modulation. US Patent 2,801,281, 1946. Filed Feb. 21, 1946, granted July 30, 1957.

**Oliver:1993:CPC**

[OS93] B. M. Oliver and Claude E. Shannon. Circuits for a P.C.M. transmitter and receiver. In Sloane and Wyner [SW93k], page 457. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Bell Laboratories Memorandum, June 1, 1944. Originally published in [OS44].

**Peres:2005:EPR**

[Per05] A. Peres. Einstein, Podolsky, Rosen, and Shannon. *Foundations of Physics*, 35(3):511–514, March 2005. CODEN FNDPA4. ISSN 0015-9018 (print), 1572-9516 (electronic). URL http://link.springer.com/article/10.1007/s10701-004-1986-6.

**Paunic:2012:SEM**

[PGM+12] Vanja Paunic, Loren Gragert, Abeer Madbouly, John Freeman, and Martin Maiers. Shannon's entropy as a measure of in silico Hla typing ambiguity reduction using population haplotype frequencies. *Tissue Antigens*, 79(6):549, ???? 2012.

**Pickover:2008:AHL**

[Pic08] Clifford A. Pickover. *Archimedes to Hawking: laws of science and the great minds behind them.* Oxford University Press, Walton Street, Oxford OX2 6DP, UK, 2008. ISBN 0-19-533611-9 (hardcover). ix + 514 pp. LCCN Q175.32.R45 P53 2008. URL http://catdir.loc.gov/catdir/toc/ecip087/2007051167.html; http://www.gbv.de/dms/goettingen/555633241.pdf; http://www.oup.com/us/catalog/general/subject/Physics/?view=usa&ci=9780195336115.

**Piner:2001:CSCd**

[Pin01] Mary-Louise G. Piner. Computer Society connection: Strategic plan maps Society's goals; IEEE Division VIII Director-Elect candidates named; student winners recognized for technical writing, academics, and involvement; membership reminder; EMC Corporation invests in CSIDC; Computer Society increases high school International Science Fair awards funding; Claude Shannon, 1916–2001. *Computer*, 34(4):84–87, April 2001. CODEN CPTRB4. ISSN 0018-9162 (print), 1558-0814 (electronic). URL `http://dlib.computer.org/co/books/co2001/pdf/r4084.pdf`.

**Pla:2006:BIA**

[Pla06] Laura Pla. Biodiversidad: Inferencia basada en el indice de Shannon y la riqueza. (Spanish) [Biodiversity: Inference about richness and Shannon index]. *Interciencia*, 31(8):583–590, ???? 2006. ISSN 0378-1844.

**Pors:2008:SDQ**

[POA+08] J. B. Pors, S. S. R. Oemrawsingh, A. Aiello, M. P. van Exter, E. R. Eliel, G. W. 't Hooft, and J. P. Woerdman. Shannon dimensionality of quantum channels and its application to photon entanglement. *Physical Review Letters*, 101(12):120502, September 19, 2008. CODEN PRLTAO. ISSN 0031-9007 (print), 1079-7114 (electronic), 1092-0145.

**Park:2006:VMS**

[PP06] Sanghyun Park and Vijay S. Pande. Validation of Markov state models using Shannon's entropy. *Journal of Chemical Physics*, 124 (5):054118, February 7, 2006. CODEN JCPSA6. ISSN 0021-9606 (print), 1089-7690 (electronic).

**Price:1982:ICS**

[Pri82] Robert Price. [interview with Claude Shannon]. Oral history Web document, July 28, 1982. URL `http://ethw.org/Oral-History:Claude_E._Shannon; http://www.ieeeghn.org/wiki/index.php/Oral-History:Claude_E._Shannon`.

**Price:1984:CCS**

[Pri84] Robert Price. A conversation with Claude Shannon: one man's approach to problem solving. *IEEE Communications Magazine*, 22(5):123–126, May 1984. CODEN ICOMD9. ISSN 0163-6804 (print), 1558-1896 (electronic). URL `http://ieeexplore.ieee.org/document/1091957/`.

**Price:1985:CCS**

[Pri85] Robert Price. A conversation with Claude Shannon: one man's approach to problem solving. *Cryptologia*, 9(2):167–175, April 1985. CODEN CRYPE6. ISSN 0161-1194 (print), 1558-1586 (electronic). URL `http://www.informaworld.com/smpp/content~content=a741902709~db=all~order=page`.

**Pierce:1948:CRD**

[PST48] John R. Pierce, Claude E. Shannon, and John W. Tukey. Cathode-ray device. US Patent 2,576,040., 1948. Filed March 10, 1948, granted November 20, 1951.

**Rabarimanantsoa:2007:RPS**

[RAL+07] H. Rabarimanantsoa, L. Achour, C. Letellier, A. Cuvelier, and J-F Muir. Recurrence plots and Shannon entropy for a dynamical analysis of asynchronisms in noninvasive mechanical ventilation. *Chaos (Woodbury, NY)*, 17(1):013115, March 2007. CODEN CHAOEH. ISSN 1054-1500.

**Rocha:2008:SEF**

[RAL+08] Lenaldo B. Rocha, Randall L. Adam, Neucimar J. Leite, Konradin Metze, and Marcos A. Rossi. Shannon's entropy and fractal dimension provide an objective account of bone tissue organization during calvarial bone regeneration. *Microscopy Research and Technique*, 71(8):619–625, August 2008. CODEN MRTEEO. ISSN 1059-910X (print), 1097-0029 (electronic).

**Romera:2004:FSI**

[RD04] E. Romera and J. S. Dehesa. The Fisher–Shannon information plane, an electron correlation tool. *Journal of Chemical Physics*, 120(19):8906–8912, May 15, 2004. CODEN JCPSA6. ISSN 0021-9606 (print), 1089-7690 (electronic).

**Riera-Fernandez:2012:NMS**

[RFME+12] Pablo Riera-Fernandez, Cristian R. Munteanu, Manuel Escobar, Francisco Prado-Prado, Raquel Martin-Romalde, David Pereira, Karen Villalba, Aliuska Duardo-Sanchez, and Humberto Gonzalez-Diaz. New markov-shannon entropy models to assess connectivity quality in complex networks: From molecular to cellular pathway, parasite-host, neural, industry, and legal-social networks. *Journal of Theoretical Biology*, 293(??):174–188, ???? 2012. CODEN JTBIAP. ISSN 0022-5193 (print), 1095-8541 (electronic).

**Rodriguez:2016:ESC**

[RHQ+16] Ricardo A. Rodríguez, Ada Ma. Herrera, Ángel Quirós, María J. Fernández-Rodríguez, Juan D. Delgado, Antonia Jiménez-Rodríguez, José Ma. Fernández-Palacios, Rüdiger Otto, Carlos G. Escudero, Tomás Camarena Luhrs, Jezahel V. Miranda, Rafael Ma. Navarro-Cerrillo, María E. Perdomo, and Rodrigo Riera. Exploring the spontaneous contribution of Claude E. Shannon to eco-evolutionary theory. *Ecological Modelling*, 327(??):57–64, May 10, 2016. CODEN ECMODT. ISSN 0304-3800 (print), 1872-7026 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0304380016300096`.

**Ricotta:2003:PSS**

[Ric03] Carlo Ricotta. Parametric scaling from species relative abundances to absolute abundances in the computation of biological diversity: A first proposal using Shannon's entropy. *Acta Biotheoretica*, 51(3):181–188, ???? 2003. CODEN ABIOAN. ISSN 0001-5342 (print), 1572-8358 (electronic).

**Rifkin:1985:MSI**

[Rif85] R. D. Rifkin. Maximum Shannon information content of diagnostic medical testing, including application to multiple non-independent tests. *Medical Decision Making*, 5(2):179–190, ???? 1985. ISSN 0272-989X (print), 1552-681X (electronic).

**Refregier:2006:SEP**

[RM06] Philippe Refregier and Jerome Morio. Shannon entropy of partially polarized and partially coherent light with Gaussian fluctuations. *Journal of the Optical Society of America. A, Optics, image science, and vision*, 23(12):3036–3044, December 2006. CODEN JOAOD6. ISSN 1084-7529 (print), 1520-8532 (electronic).

**Roch:1999:BIA**

[Roc99] Axel Roch. Biopolitics and intuitive algebra in the mathematization of cryptology? A review of Shannon's "A Mathematical Theory of Cryptography" from 1945. *Cryptologia*, 23(3):261–266, 1999. CODEN CRYPE6. ISSN 0161-1194 (print), 1558-1586 (electronic).

**Roch:2010:CSS**

[Roc10] Axel Roch. *Claude E. Shannon: Spielzeug, Leben und die geheime Geschichte seiner Theorie der Information. (German) [Claude E.*

*Shannon: Toys, Life and the Secret History of His Theory of Information]*. Gegenstalt Verlag, Berlin, Germany, second edition, 2010. ISBN 3-9813156-0-X. 254 pp. LCCN QA29.S423 R63 2010.

**Roch:2011:CSS**

[Roc11] Axel Roch. Claude E. Shannon, *Spielzeug, Leben und die geheime Geschichte seiner Theorie der Information* (Roch, A.; 2009) [book review]. (German) [Claude E. Shannon, toys, life and the secret history of his theory of information]. *IEEE Transactions on Information Theory*, 57(3):1827–1828, March 2011. CODEN IETTAW. ISSN 0018-9448 (print), 1557-9654 (electronic). Based on Axel Roch's 2009 doctoral dissertation in the History of Natural Science at the Ludwig-Maximilians University in Munich.

**Rogers:1994:HCS**

[Rog94] Everett M. Rogers. *A history of communication study: a biographical approach.* Free Press, New York, NY, USA, 1994. ISBN 0-02-926735-8. xv + 576 pp. LCCN P90 .R613 1994. US$34.95. URL `http://www.loc.gov/catdir/enhancements/fy0645/93043281-s.html; http://www.loc.gov/catdir/enhancements/fy0645/93043281-t.html`.

**Riordan:1942:NTT**

[RS42] John Riordan and C. E. Shannon. The number of two-terminal series–parallel networks. *Journal of mathematics and physics / Massachusetts Institute of Technology*, 21(1–4):83–93, April 1942. CODEN JMPHA9. ISSN 0097-1421.

**Riordan:1993:NTT**

[RS93] John Riordan and C. E. Shannon. The number of two-terminal series–parallel networks. In Sloane and Wyner [SW93k], pages 560–570. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [RS42].

**Ricotta:2006:TUA**

[RS06] Carlo Ricotta and Laszlo Szeidl. Towards a unifying approach to diversity measures: Bridging the gap between the Shannon entropy and Rao's quadratic index. *Theoretical Population Biology*, 70(3):237–243, ???? 2006. CODEN TLPBAQ. ISSN 0040-5809 (print), 1096-0325 (electronic).

**Santini:2005:WSI**

[San05] Simone Santini. We are sorry to inform you .... *Computer*, 38(12): 128, 126–127, December 2005. CODEN CPTRB4. ISSN 0018-9162 (print), 1558-0814 (electronic).

**Savchuk:1964:EEL**

[Sav64] A. P. Savchuk. On estimates for the entropy of a language according to Shannon. *Theory of Probability and its Applications*, 9(1): 138–141, ???? 1964. CODEN TPRBAU. ISSN 0040-585X (print), 1095-7219 (electronic).

**Savage:2011:ITA**

[Sav11] Neil Savage. Information theory after Shannon. *Communications of the ACM*, 54(2):16–18, February 2011. CODEN CACMA2. ISSN 0001-0782 (print), 1557-7317 (electronic).

**Sanjit:2005:SWS**

[SB05] Laishangbam Sanjit and Dinish Bhatt. Shannon and Wiener or Shannon and Weaver? *Current Science (Bangalore)*, 88(5):675, ???? 2005. ISSN 0011-3891.

**Strinati:2021:NBS**

[SB21] Emilio Calvanese Strinati and Sergio Barbarossa. 6G networks: Beyond Shannon towards semantic and goal-oriented communications. *Computer Networks (Amsterdam, Netherlands: 1999)*, 190 (??):??, May 8, 2021. CODEN ???? ISSN 1389-1286 (print), 1872-7069 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S1389128621000773`.

**Silva:2013:FDS**

[SBS+13] Danilo A. Silva, Glaucia G. Basso, Vinicius L. Semenzim, Moacir F. Godoy, Sebastiao R. Taboga, Alexandre L. Andrade, Maria C. R. Luvizotto, Domingo M. Braile, and Jose G. Nery. Fractal dimension and Shannon's entropy analyses of the architectural complexity caused by the inflammatory reactions induced by highly crystalline poly(vinyl alcohol) microspheres implanted in subcutaneous tissues of the wistar rats. *Journal of Biomedical Materials Research*, 101A(2):326–339, ???? 2013. CODEN JBMRBG. ISSN 0021-9304 (print), 1097-4636 (electronic).

**Schroeder:1991:FCP**

[Sch91] Manfred Schroeder. *Fractals, Chaos, Power Laws*. W. H. Freeman and Company, New York, NY, USA, 1991. ISBN 0-671-74217-5,

0-7167-2136-8, 0-7167-2357-3. xviii + 429 pp. LCCN QD921 .S3 1990.

**Schneider:2006:CSB**

[Sch06] Thomas D. Schneider. Claude Shannon: biologist. The founder of information theory used biology to formulate the channel capacity. *IEEE engineering in medicine and biology magazine*, 25(1):30–33, January/February 2006. CODEN IEMBDE. ISSN 0739-5175 (print), 1937-4186 (electronic).

**Strait:1996:SIE**

[SD96] Bonnie J. Strait and T. Gregory Dewey. The Shannon information entropy of protein sequences. *Biophysical Journal*, 71(1):148–155, July 1996. CODEN BIOJAU. ISSN 0006-3495 (print), 1542-0086 (electronic).

**Sen:2005:CFS**

[Sen05] K. D. Sen. Characteristic features of Shannon information entropy of confined atoms. *Journal of Chemical Physics*, 123(7):074110, August 15, 2005. CODEN JCPSA6. ISSN 0021-9606 (print), 1089-7690 (electronic).

**Sen:2021:EFH**

[Sen21] Paul Sen. *Einstein's fridge: how the difference between hot and cold explains the universe*. Scribner, New York, NY, USA, 2021. ISBN 1-5011-8130-0 (hardcover), 1-5011-8132-7 (e-book). xii + 305 pp. LCCN QC311 .S5118 2021.

**Spellerberg:2003:TCS**

[SF03] Ian F. Spellerberg and Peter J. Fedor. A tribute to Claude Shannon (1916–2001) and a plea for more rigorous use of species richness, species diversity and the 'Shannon–Wiener' index. *Global Ecology and Biogeography*, 12(3):177–179, May 2003. CODEN GEBIFS. ISSN 1466-822X (print), 1466-8238 (electronic).

**Soni:2017:MPH**

[SG17] Jimmy Soni and Rob Goodman. *A mind at play: how Claude Shannon invented the information age*. Simon and Schuster, New York, NY, USA, 2017. ISBN 1-4767-6668-1 (hardcover), 1-4767-6669-X (paperback), 1-4767-6670-3 (e-book). xv + 366 pp. LCCN QA29.S423 S66 2017.

**Szpankowski:2018:FSI**

[SG18] Wojciech Szpankowski and Ananth Grama. Frontiers of science of information: Shannon meets Turing. *Computer*, 51(1):28–38, January 2018. CODEN CPTRB4. ISSN 0018-9162 (print), 1558-0814 (electronic). URL `https://www.computer.org/csdl/mags/co/2018/01/mco2018010028-abs.html`.

**Shannon:1967:LBEa**

[SGB67a] C. E. Shannon, R. G. Gallager, and E. R. Berlekamp. Lower bounds to error probability for coding on discrete memoryless channels. I. *Information and Control*, 10(1):65–103, January 1967. CODEN IFCNA4. ISSN 0890-5401 (print), 1090-2651 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0019995867900526`. Reprinted in [Sle74].

**Shannon:1967:LBEb**

[SGB67b] C. E. Shannon, R. G. Gallager, and E. R. Berlekamp. Lower bounds to error probability for coding on discrete memoryless channels. II. *Information and Control*, 10(5):522–552, May 1967. CODEN IFCNA4. ISSN 0890-5401 (print), 1090-2651 (electronic). Reprinted in [Sle74].

**Stahura:2002:DSE**

[SGB02] Florence L. Stahura, Jeffrey W. Godden, and Jürgen Bajorath. Differential Shannon entropy analysis identifies molecular property descriptors that predict aqueous solubility of synthetic compounds with high accuracy in binary QSAR calculations. *Journal of Chemical Information and Computer Sciences*, 42(3):550–558, ???? 2002. CODEN JCISD8. ISSN 0095-2338 (print), 1520-5142 (electronic).

**Subramaniyam:2004:SUP**

[SGG04] V. Subramaniyam, S. K. Gupta, and T. C. Ghosh. Shannon's uncertainty principle and gene expression levels. *Current Science (Bangalore)*, 86(8):1142–1147, ???? 2004. ISSN 0011-3891.

**Shannon:1956:CRF**

[SH56] Claude E. Shannon and D. W. Hagelbarger. Concavity of resistance functions. *Journal of Applied Physics*, 27(1):42–43, January 1956. CODEN JAPIAU. ISSN 0021-8979 (print), 1089-7550 (electronic), 1520-8850. URL `http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=5121343`.

**Shannon:1937:SAR**

[Sha37] Claude Elwood Shannon. A symbolic analysis of relay and switching circuits. Master of Science, Department of Electrical Engineering, MIT, Cambridge, MA, USA, August 10, 1937. 72 pp. URL `http://dspace.mit.edu/bitstream/handle/1721.1/11173/34541425.pdf`. Not submitted until 1940.

**Shannon:1938:SAR**

[Sha38] Claude E. Shannon. A symbolic analysis of relay and switching circuits. *Transactions of the American Institute of Electrical Engineers*, 57(12):713–723, December 1938. CODEN TAEEA5. ISSN 0096-3860. URL `http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6431064`.

**Shannon:1939:LVB**

[Sha39] Claude E. Shannon. Letter to Vannevar Bush. Reprinted in [Hag79]., February 16, 1939.

**Shannon:1940:TCC**

[Sha40a] Claude E. Shannon. A theorem on color coding. Memorandum 40-130-153, Bell Laboratories, Murray Hill, NJ, USA, July 8, 1940. ???? pp.

**Shannon:1940:ULH**

[Sha40b] Claude E. Shannon. The use of the Lakatos–Hickman relay in a subscriber sender. Memorandum 40-130-179, Bell Laboratories, Murray Hill, NJ, USA, August 3, 1940. 7 + 8 pp.

**Shannon:1940:ATG**

[Sha40c] Claude Elwood Shannon. *An Algebra for Theoretical Genetics*. Ph.D. dissertation, Department of Mathematics, Massachusetts Institute of Technology, Cambridge, MA, USA, April 15, 1940. 69 pp. Republished in [Sha93a].

**Shannon:1941:BOS**

[Sha41a] Claude E. Shannon. Backlash in overdamped systems. Report to National Defense Research Committee, Princeton University, Bell Laboratories, Murray Hill, NJ, USA, May 14, 1941. 6 pp.

**Shannon:1941:CCU**

[Sha41b] Claude E. Shannon. Criteria for consistency and uniqueness in relay circuits. Typescript., September 8, 1941.

**Shannon:1941:HDS**

[Sha41c] Claude E. Shannon. A height data smoothing mechanism. Report to National Defense Research Committee, Princeton University Division 7-313.2-M1, Bell Laboratories, Murray Hill, NJ, USA, May 26, 1941. 9 + 9 pp.

**Shannon:1941:MTD**

[Sha41d] Claude E. Shannon. Mathematical theory of the differential analyzer. *Journal of mathematics and physics / Massachusetts Institute of Technology*, 20(1–4):337–354, April 1941. CODEN JMPHA9. ISSN 0097-1421.

**Shannon:1941:SER**

[Sha41e] Claude E. Shannon. Some experimental results on the deflection mechanism. Report to National Defense Research Committee, Princeton University Division 7-311-M1, Bell Laboratories, Murray Hill, NJ, USA, June 26, 1941. 11 pp.

**Shannon:1941:SDM**

[Sha41f] Claude E. Shannon. A study of the deflection mechanism and some results on rate finders. Report to National Defense Research Committee Division 7-311-M1, Bell Laboratories, Murray Hill, NJ, USA, April 1941. 37 + 15 pp.

**Shannon:1941:TLD**

[Sha41g] Claude E. Shannon. The theory of linear differential and smoothing operators. Report to National Defense Research Committee, Princeton University Division 7-313.1-M1, Bell Laboratories, Murray Hill, NJ, USA, June 8, 1941. 11 pp.

**Shannon:1942:TDL**

[Sha42] Claude E. Shannon. The theory and design of linear differential equation machines. Report to the Services 20 Division 7-311-M2, Bell Laboratories, Murray Hill, NJ, USA, January 1942. 73 + 30 pp.

**Shannon:1943:AVS**

[Sha43a] Claude E. Shannon. Analogue of the Vernam system for continuous time series. Memorandum MM 43-110-44, Bell Laboratories, Murray Hill, NJ, USA, May 10, 1943. 4 + 4 pp.

**Shannon:1943:PCM**

[Sha43b] Claude E. Shannon. Pulse code modulation. Memorandum MM 43-110-43, Bell Laboratories, Murray Hill, NJ, USA, December 1, 1943.

**Shannon:1944:BDP**

[Sha44a] Claude E. Shannon. The best detection of pulses. Memorandum MM 44-110-28, Bell Laboratories, Murray Hill, NJ, USA, June 22, 1944.

**Shannon:1944:CPC**

[Sha44b] Claude E. Shannon. Counting up or down with pulse counters. Typescript., May 31, 1944.

**Shannon:1944:FSP**

[Sha44c] Claude E. Shannon. Feedback systems with periodic loop closure. Memorandum MM 44-110-32, Bell Laboratories, Murray Hill, NJ, USA, March 16, 1944.

**Shannon:1944:PSM**

[Sha44d] Claude E. Shannon. Pulse shape to minimize bandwidth with nonoverlapping pulses. Typescript., August 4, 1944.

**Shannon:1944:TNC**

[Sha44e] Claude E. Shannon. Two new circuits for alternate pulse counting. Typescript., May 29, 1944.

**Shannon:1945:MTC**

[Sha45a] Claude Shannon. A mathematical theory of cryptography. Memorandum MM 45-110-02, Bell Laboratories, Murray Hill, NJ, USA, September 1, 1945. 114 + 25 pp. URL `https://www.iacr.org/museum/shannon/shannon45.pdf`. Classified report. Superseded by [Sha49b].

**Shannon:1945:MSD**

[Sha45b] Claude E. Shannon. Mixed statistical determinate systems. Typescript., September 19, 1945.

**Shannon:1946:EMT**

[Sha46] Claude E. Shannon. Electronic methods in telephone switching. Unpublished notes., October 17, 1946.

**Shannon:1948:CEC**

[Sha48a] Claude E. Shannon. A case of efficient coding for a very noisy channel. Typescript., November 18, 1948.

**Shannon:1948:MTCa**

[Sha48b] Claude E. Shannon. A mathematical theory of communication. *The Bell System Technical Journal*, 27(3):379–423, July 1948. CODEN BSTJAN. ISSN 0005-8580. URL `http://bstj.bell-labs.com/BSTJ/images/Vol27/bstj27-3-379.pdf`. Reprinted in [Sle74]. From the first page: "If the base 2 is used the resulting units may be called binary digits, or more briefly, *bits*, a word suggested by J. W. Tukey.". This is the first known printed instance of the word 'bit' with the meaning of binary digit.

**Shannon:1948:MTCb**

[Sha48c] Claude E. Shannon. A mathematical theory of communication (continued). *The Bell System Technical Journal*, 27 (4):623–656, October 1948. CODEN BSTJAN. ISSN 0005-8580. URL `http://bstj.bell-labs.com/BSTJ/images/Vol27/bstj27-4-623.pdf`. Reprinted in [Sle74].

**Shannon:1948:NR**

[Sha48d] Claude E. Shannon. Network rings. Typescript., June 11, 1948.

**Shannon:1948:NEE**

[Sha48e] Claude E. Shannon. The normal ergodic ensembles of functions. Typescript., March 15, 1948.

**Shannon:1948:NCT**

[Sha48f] Claude E. Shannon. Note on certain transcendental numbers. Typescript., October 27, 1948.

**Shannon:1948:NRD**

[Sha48g] Claude E. Shannon. Note on reversing a discrete Markhoff process. Typescript., December 6, 1948.

**Shannon:1948:SAC**

[Sha48h] Claude E. Shannon. Significance and application [of communication research]. In *Symposium on Communication Research, 11–13 October, 1948*, number 14 in Digest series, pages 14–23. Research and Development Board, Department of Defense, Washington, DC, USA, 1948. LCCN ????

**Shannon:1948:SGS**

[Sha48i] Claude E. Shannon. Some generalizations of the sampling theorem. Typescript., March 4, 1948.

**Shannon:1948:SWA**

[Sha48j] Claude E. Shannon. Systems which approach the ideal as $P/N \rightarrow \infty$. Typescript., March 15, 1948.

**Shannon:1948:TSS**

[Sha48k] Claude E. Shannon. Theorems on statistical sequences. Typescript., March 15, 1948.

**Shannon:1949:CPN**

[Sha49a] Claude E. Shannon. Communication in the presence of noise. *Proceedings of the Institute of Radio Engineers*, 37(1):10–21, 1949. CODEN PIREAE. ISSN 0096-8390 (print), 2162-6634 (electronic). URL `http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=1697831`. Reprinted in [Sle74], [Sha84a], and [Sha98b].

**Shannon:1949:CTS**

[Sha49b] Claude E. Shannon. Communication theory of secrecy systems. *The Bell System Technical Journal*, 28(4):656–715, October 1949. CODEN BSTJAN. ISSN 0005-8580. URL `http://bstj.bell-labs.com/BSTJ/images/Vol28/bstj28-4-656.pdf; http://en.wikipedia.org/wiki/Communication_Theory_of_Secrecy_Systems; http://www.cs.ucla.edu/~jkong/research/security/shannon1949.pdf`. A footnote on the initial page says: "The material in this paper appeared in a confidential report, 'A Mathematical Theory of Cryptography', dated Sept. 1, 1945 ([Sha45a]), which has now been declassified.".

**Shannon:1949:IT**

[Sha49c] Claude E. Shannon. Information theory. Typescript of abstract of talk for American Statistical Society, 1949.

**Shannon:1949:RCC**

[Sha49d] Claude E. Shannon. Review of *Cybernetics, or Control and Communication in the Animal and the Machine*, by Norbert Wiener. *Proceedings of the Institute of Radio Engineers*, 37(??):1305, ???? 1949. CODEN PIREAE. ISSN 0096-8390 (print), 2162-6634 (electronic). URL `http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=1697907`.

**Shannon:1949:RTL**

[Sha49e] Claude E. Shannon. Review of *Transformations on Lattices and Structures of Logic*, by Stephen A. Kiss. *Proceedings of the Institute of Radio Engineers*, 37(10):1163, October 1949. CODEN PIREAE. ISSN 0096-8390 (print), 2162-6634 (electronic). URL `http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=1697869`.

**Shannon:1949:STT**

[Sha49f] Claude E. Shannon. The synthesis of two-terminal switching circuits. *The Bell System Technical Journal*, 28(1):59–98, January 1949. CODEN BSTJAN. ISSN 0005-8580. URL `http://bstj.bell-labs.com/BSTJ/images/Vol28/bstj28-1-59.pdf`.

**Shannon:1949:TCL**

[Sha49g] Claude E. Shannon. A theorem on coloring the lines of a network. *Journal of mathematics and physics / Massachusetts Institute of Technology*, 28(1–4):148–152, April 1949. CODEN JMPHA9. ISSN 0097-1421.

**Shannon:1950:SNN**

[Sha50a] C. E. Shannon. A symmetrical notation for numbers. *American Mathematical Monthly*, 57(2):90–93, February 1950. CODEN AMMYAE. ISSN 0002-9890 (print), 1930-0972 (electronic).

**Shannon:1950:CPM**

[Sha50b] Claude E. Shannon. A chess-playing machine. *Scientific American*, 182(2):48–51, February 1950. CODEN SCAMAC. ISSN 0036-8733 (print), 1946-7087 (electronic). Reprinted in [New56].

**Shannon:1950:DMT**

[Sha50c] Claude E. Shannon. A digital method of transmitting information. Typescript (no date)., 1950.

**Shannon:1950:MRT**

[Sha50d] Claude E. Shannon. Memory requirements in a telephone exchange. *The Bell System Technical Journal*, 29(3):343–349, July 1950. CODEN BSTJAN. ISSN 0005-8580. URL `http://bstj.bell-labs.com/BSTJ/images/Vol29/bstj29-3-343.pdf`.

**Shannon:1950:MPS**

[Sha50e] Claude E. Shannon. A method of power or signal transmission to a moving vehicle. Memorandum for Record ??, Bell Laboratories, Murray Hill, NJ, USA, July 19, 1950. 2 + 4 pp.

**Shannon:1950:NKT**

[Sha50f] Claude E. Shannon. Neuentwicklungen in der Kommunikation Theorie (German.) [Recent developments in communication theory]. *Tech. Mitt. P.T.T.*, 28:337–342, ???? 1950. CODEN TMPTAJ. ISSN 0040-1471. German translation of [Sha50i].

**Shannon:1950:PCP**

[Sha50g] Claude E. Shannon. Programming a computer for playing chess. *Philos. Mag. (7)*, 41(314):256–275, March 1950. Reprinted in [Lev88].

**Shannon:1950:PIF**

[Sha50h] Claude E. Shannon. Proof of an integration formula. Typescript, 1950.

**Shannon:1950:RDC**

[Sha50i] Claude E. Shannon. Recent developments in communication theory. *Electronics*, 23(??):80–83, April 1950. ISSN 0883-4989.

**Shannon:1950:RDR**

[Sha50j] Claude E. Shannon. Review of *Description of a Relay Computer*, by the Staff of the [Harvard] Computation Laboratory. *Proceedings of the Institute of Radio Engineers*, 38(??):449, April 1950. CODEN PIREAE. ISSN 0096-8390 (print), 2162-6634 (electronic).

**Shannon:1951:PEP**

[Sha51a] C. E. Shannon. Prediction and entropy of printed English. *The Bell System Technical Journal*, 30(1):50–64, January 1951. CODEN BSTJAN. ISSN 0005-8580. URL `http://bstj.bell-labs.com/BSTJ/images/Vol30/bstj30-1-50.pdf`. Reprinted in [Sle74].

**Shannon:1951:CA**

[Sha51b] Claude E. Shannon. Control apparatus. US Patent application, 1951. Applied for August 1951, dropped January 21, 1954.

**Shannon:1951:PMS**

[Sha51c] Claude E. Shannon. Presentation of a maze solving machine. In Heinz von Foerster, Margaret Mead, and H. L. Teuber, editors, *Cybernetics: Circular, Causal and Feedback Mechanisms in Biological and Social Systems, Transactions Eighth Conference, March 15–16, 1951, New York, NY*, pages 169–181. Josiah Macy Jr. Foundation, New York, NY, USA, 1951. LCCN ????

**Shannon:1952:CT**

[Sha52a] Claude E. Shannon. Creative thinking. Typescript. Reproduced in [SW93l, pages 528–539]., March 20, 1952.

**Shannon:1952:STI**

[Sha52b] Claude E. Shannon. Some topics in information theory. In AMS and ICM, editors, *Proceedings of the International Congress of Mathematicians (Cambridge, Massachusetts, August 30–September 6, 1950)*, volume II, pages 262–263. American Mathematical Society, Providence, RI, USA, 1952. LCCN ????

**Shannon:1953:CTEa**

[Sha53a] Claude E. Shannon. Communication theory — exposition of fundamentals. *Transactions of the IRE Professional Group on Information Theory*, 1(1):44–47, February 1953. CODEN IRITAY. ISSN 0096-1000 (print), 2168-2712 (electronic).

**Shannon:1953:CTEb**

[Sha53b] Claude E. Shannon. Communication theory — exposition of fundamentals. In Anonymous [Ano53], pages 44–47. URL `http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=1188568`.

**Shannon:1953:CA**

[Sha53c] Claude E. Shannon. Computers and automata. *Proceedings of the Institute of Radio Engineers*, 41(10):1234–1241, 1953. CODEN PIREAE. ISSN 0096-8390 (print), 2162-6634 (electronic). URL `http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=4051186`. Reprinted in *Methodos*, Vol. 6 (1954), pp. 115–130.

**Shannon:1953:GTP**

[Sha53d] Claude E. Shannon. General treatment of the problem of coding. In Anonymous [Ano53], pages 102–104. URL `http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=1188559`.

**Shannon:1953:LTI**

[Sha53e] Claude E. Shannon. The lattice theory of information. In Anonymous [Ano53], pages 105–107. URL `http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=1188572`.

**Shannon:1953:MHG**

[Sha53f] Claude E. Shannon. Mathmanship or how to give an explicit solution without actually solving the problem. Typescript., July 3, 1953.

**Shannon:1953:MRM**

[Sha53g] Claude E. Shannon. A mind-reading (?) machine. Typescript., March 18, 1953.

**Shannon:1953:PC**

[Sha53h] Claude E. Shannon. The potentialities of computers. Unpublished notes., April 3, 1953.

**Shannon:1953:RAS**

[Sha53i] Claude E. Shannon. Realization of all 16 switching functions of two variables requires 18 contacts. Memorandum MM 53-1400-40, Bell Laboratories, Murray Hill, NJ, USA, November 17, 1953. 4 + 2 pp.

**Shannon:1953:TCO**

[Sha53j] Claude E. Shannon. Throbac — circuit operation. Typescript., April 9, 1953.

**Shannon:1953:T**

[Sha53k] Claude E. Shannon. Throbac I. Typescript, reprinted in [SW93k, pages 695–698]., April 9, 1953. URL `http://ieeeexplore.us/xpl/articleDetails.jsp?reload=true&arnumber=5311583; http://webmuseum.mit.edu/detail.php?t=exhibitions&type=exh&f=&s=3&record=6`.

**Shannon:1953:TH**

[Sha53l] Claude E. Shannon. Tower of Hanoi. Typescript, April 20, 1953.

**Shannon:1954:BDR**

[Sha54a] Claude E. Shannon. Bounds on the derivatives and rise time of a band and amplitude limited signal. Typescript., April 8, 1954.

**Shannon:1954:ECB**

[Sha54b] Claude E. Shannon. Efficient coding of a binary source with one very infrequent symbol. Memorandum MM 54-114-7, Bell Laboratories, Murray Hill, NJ, USA, January 19, 1954. Reprinted in [Sha93q].

**Shannon:1954:UTM**

[Sha54c] Claude E. Shannon. A universal Turing Machine with two internal states. Memorandum 54-114-38, Bell Laboratories, Murray Hill, NJ, USA, May 15, 1954. Published in [dLMSS56].

**Shannon:1955:GPM**

[Sha55a] C. E. Shannon. Game playing machines. *Journal of The Franklin Institute*, 260(6):447–453, December 1955. CODEN JFINAB. ISSN 0016-0032 (print), 1879-2693 (electronic).

**Shannon:1955:CTR**

[Sha55b] Claude E. Shannon. Concavity of transmission rate as a function of input probabilities. Memorandum MM 55-114-28, Bell Laboratories, Murray Hill, NJ, USA, June 8, 1955.

**Shannon:1955:RAI**

[Sha55c] Claude E. Shannon. The rate of approach to ideal coding (abstract). *Proceedings of the Institute of Radio Engineers*, 43(3):356, March 1955. CODEN PIREAE. ISSN 0096-8390 (print), 2162-6634 (electronic). URL `http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=4055417`.

**Shannon:1955:SSS**

[Sha55d] Claude E. Shannon. The simultaneous synthesis of $s$ switching functions of $n$ variables. Memorandum MM 55-114-30, Bell Laboratories, Murray Hill, NJ, USA, June 8, 1955.

**Shannon:1955:SRI**

[Sha55e] Claude E. Shannon. Some results on ideal rectifier circuits. Memorandum MM 55-114-29, Bell Laboratories, Murray Hill, NJ, USA, June 8, 1955.

**Shannon:1956:BE**

[Sha56a] Claude E. Shannon. The bandwagon (editorial). *IRE Transactions on Information Theory*, IT-2(1):3, March 1956. CODEN IRITAY. ISSN 0096-1000 (print), 2168-2712 (electronic). Response to [dR55].

**Shannon:1956:IT**

[Sha56b] Claude E. Shannon. Information theory. Seminar notes, Massachusetts Institute of Technology, Cambridge, MA, US, 1956.

**Shannon:1956:NRE**

[Sha56c] Claude E. Shannon. Notes on relation of error probability to delay in a noisy channel. Lecture notes, Massachusetts Institute of Technology, Cambridge, MA, US, August 30, 1956. 3 pp.

**Shannon:1956:NKB**

[Sha56d] Claude E. Shannon. Notes on the Kelly Betting Theory of Noisy Information. Lecture notes, Massachusetts Institute of Technology, Cambridge, MA, US, August 31, 1956. 2 pp.

**Shannon:1956:PPH**

[Sha56e] Claude E. Shannon. The portfolio problem, and how to pay the forecaster. Lecture notes, Massachusetts Institute of Technology, Cambridge, MA, US, Spring 1956. 8 pp. Notes takes by W. W. Peterson.

**Shannon:1956:RMU**

[Sha56f] Claude E. Shannon. Reliable machines from unreliable components. Notes of five lectures, Massachusetts Institute of Technology, Cambridge, MA, US, Spring 1956. 24 pp.

**Shannon:1956:SGR**

[Sha56g] Claude E. Shannon. Some geometrical results in channel capacity. *Fachberichte Verband Deutsche Elektrotechniker*, 19(II):13–15, ???? 1956. English version of ????.

**Shannon:1956:UTM**

[Sha56h] Claude E. Shannon. A universal Turing machine with two internal states. In *Automata studies*, Annals of mathematics studies, no. 34, pages 157–165. Princeton University Press, Princeton, NJ, USA, 1956.

**Shannon:1956:ZEC**

[Sha56i] Claude E. Shannon. The zero error capacity of a noisy channel. *IRE Transactions on Information Theory*, IT-2(3):8–19, September 1956. CODEN IRITAY. ISSN 0096-1000 (print), 2168-2712 (electronic). URL `http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=1056798`. Reprinted in [Sle74].

**Shannon:1957:CRC**

[Sha57a] Claude E. Shannon. Certain results in coding theory for noisy channels. *Information and Control*, 1(1):6–25, September 1957. CODEN IFCNA4. ISSN 0890-5401 (print), 1090-2651 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0019995857900396`. Reprinted in [Sle74].

**Shannon:1957:GDE**

[Sha57b] Claude E. Shannon. Geometrische Deutung einiger Ergebnisse bei die Berechnung der Kanal Capazität. (German) [Geometrical meaning of some results in the calculation of channel capacity]. *Nachrichtentechnische Zeitung (N.T.Z.)*, 10(1):1–4, 1957.

**Shannon:1957:SGR**

[Sha57c] Claude E. Shannon. Some geometrical results in channel capacity. *Nachrichtentechnische Fachber. (N.T.F.)*, 6(??):??, ???? 1957. English version of ????.

**Shannon:1958:CSI**

[Sha58a] Claude E. Shannon. Channels with side information at the transmitter. *IBM Journal of Research and Development*, 2(4):289–293, 1958. CODEN IBMJAE. ISSN 0018-8646 (print), 2151-8556 (electronic). URL `http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=5392641`. Reprinted in [Sle74].

**Shannon:1958:NPO**

[Sha58b] Claude E. Shannon. A note on a partial ordering for communication channels. *Information and Control*, 1(4):390–397, December 1958. CODEN IFCNA4. ISSN 0890-5401 (print), 1090-2651 (electronic). Reprinted in [Sle74].

**Shannon:1958:NCA**

[Sha58c] Claude E. Shannon. Von Neumann's contributions to automata theory. *Bulletin of the American Mathematical Society*, 64(3 (part 2)):123–129, May 1958. CODEN BAMOAD. ISSN 0002-9904 (print), 1936-881X (electronic). URL `http://projecteuclid.org/euclid.bams/1183522376`.

**Shannon:1959:CDI**

[Sha59a] Claude E. Shannon. Coding a discrete information source with a distortion measure. *Proceedings of the Institute of Radio Engineers*, 47(3):472, March 1959. CODEN PIREAE. ISSN 0096-8390

(print), 2162-6634 (electronic). URL `http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=4065696`. One-paragraph abstract only.

**Shannon:1959:CTD**

[Sha59b] Claude E. Shannon. Coding theorems for a discrete source with a fidelity criterion. *Institute of Radio Engineers, International Convention Record*, 7 (part 4):142–163, ???? 1959. Reprinted with changes in [Sha60]. Reprinted in [Sle74].

**Shannon:1959:PEO**

[Sha59c] Claude E. Shannon. Probability of error for optimal codes in a Gaussian channel. *The Bell System Technical Journal*, 38(3):611–656, May 1959. CODEN BSTJAN. ISSN 0005-8580. URL `http://bstj.bell-labs.com/BSTJ/images/Vol38/bstj38-3-611.pdf`.

**Shannon:1960:CTD**

[Sha60] Claude E. Shannon. Coding theorems for a discrete source with a fidelity criterion. In Robert Engel Machol, editor, *Information and decision processes*, pages 93–126. McGraw-Hill, New York, NY, USA, 1960.

**Shannon:1961:TWC**

[Sha61] Claude E. Shannon. Two-way communication channels. In J. Neyman, editor, *Proceedings of the 4th Berkeley Symposium on Mathematical Statistics and Probability, June 20–July 30, 1960*, volume I, pages 611–644. University of California Press, Berkeley, CA, USA, 1961. URL `http://projecteuclid.org/euclid.bsmsp/1200512185`. Reprinted in [Sle74].

**Shannon:1963:CAP**

[Sha63a] Claude E. Shannon. Computers and automation — progress and promise in the Twentieth Century. In Higginbotham [Hig63], pages 201–211. LCCN ????

**Shannon:1963:IT**

[Sha63b] Claude E. Shannon. Information theory. Josiah Willard Gibbs Lecture, Berkeley, California., January 1963.

**Shannon:1968:C**

[Sha68a] Claude E. Shannon. Cybernetics. In *Encyclopedia Britannica*, volume 12, page ?? Encyclopedia Britannica, Chicago, IL, USA, 14th edition, 1968. LCCN ???? Written circa 1955.

**Shannon:1968:IT**

[Sha68b] Claude E. Shannon. Information theory. In *Encyclopedia Britannica*, volume 12, pages 246–249. Encyclopedia Britannica, Chicago, IL, USA, 14th edition, 1968. LCCN ???? Written circa 1955.

**Shannon:1978:FDT**

[Sha78] Claude E. Shannon. The fourth-dimensional twist, or a modest proposal in aid of the American driver in England. Typescript, All Souls College, Oxford University, Trinity term, 1978.

**Shannon:1980:SAJ**

[Sha80] Claude E. Shannon. Scientific aspects of juggling. Typescript, 1980.

**Shannon:1982:CSN**

[Sha82a] Claude E. Shannon. Claude Shannon's no-drop juggling diorama. *Juggler's World*, 34(??):20–22, March 1982.

**Shannon:1982:RRC**

[Sha82b] Claude E. Shannon. A rubric on Rubik cubics. Typescript., 1982.

**Shannon:1984:CPN**

[Sha84a] Claude E. Shannon. Communication in the presence of noise. *Proceedings of the IEEE*, 72(9):1192–1201, September 1984. CODEN IEEPAD. ISSN 0018-9219 (print), 1558-2256 (electronic). URL `http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=1457266`. Reprint of [Sha49a].

**Shannon:1984:ENC**

[Sha84b] Claude E. Shannon. Editorial note on *Communication in the presence of noise. Proceedings of the IEEE*, 72(12):1713, 1984. CODEN IEEPAD. ISSN 0018-9219 (print), 1558-2256 (electronic).

**Shannon:1985:DCC**

[Sha85] Claude E. Shannon. Development of communication and computing. Lecture at Inamori Foundation, Kyoto, Japan, November 1985 on receipt of Kyoto Prize., 1985. URL `http://www.kyotoprize.org/wp/wp-content/uploads/2016/02/1kB_lct_EN.pdf`.

**Shannon:1993:ATG**

[Sha93a] Claude E. Shannon. An algebra for theoretical genetics. In Sloane and Wyner [SW93k], pages 891–920. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Ph.D. Dissertation, Massachusetts Institute of Technology, 1940. Originally published in [Sha40c].

**Shannon:1993:AVS**

[Sha93b] Claude E. Shannon. Analogue of the Vernam system for continuous time series. In Sloane and Wyner [SW93k], pages 144–147. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Bell Laboratories Memorandum, May 10, 1943. Originally published in [Sha43a].

**Shannon:1993:BOS**

[Sha93c] Claude E. Shannon. Backlash in overdamped systems. In Sloane and Wyner [SW93k], page 868. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Report to National Defense Research Committee, June 26, 1941. Originally published in [Sha41a].

**Shannon:1993:B**

[Sha93d] Claude E. Shannon. The bandwagon. In Sloane and Wyner [SW93k], page 462. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Published in *IEEE Transactions Information Theory*, volume 2, March 1956 [Sha56a].

**Shannon:1993:BDP**

[Sha93e] Claude E. Shannon. The best detection of pulses. In Sloane and Wyner [SW93k], pages 148–150. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Bell Laboratories Memorandum, June 22, 1944. Originally published in [Sha44a].

**Shannon:1993:CRC**

[Sha93f] Claude E. Shannon. Certain results in coding theory for noisy channels. In Sloane and Wyner [SW93k], pages 239–258. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. This work was carried out at the Research Laboratory of Electronics, Massachusetts Institute of Technology, and was supported in part by the United States Army (Signal Corps), the United States Air Force (Office of Scientific Research, Air Research and Development Command), and the United States Navy (Office of Naval

Research); and in part by Bell Telephone Laboratories, Inc. Originally published in [Sha57a].

**Shannon:1993:CSI**

[Sha93g] Claude E. Shannon. Channels with side information at the transmitter. In Sloane and Wyner [SW93k], pages 273–278. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [Sha58a].

**Shannon:1993:CM**

[Sha93h] Claude E. Shannon. A chess-playing machine. In Sloane and Wyner [SW93k], pages 657–666. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [Sha50b].

**Shannon:1993:CTD**

[Sha93i] Claude E. Shannon. Coding theorems for a discrete source with a fidelity criterion. In Sloane and Wyner [SW93k], pages 325–350. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Published in *Institute of Radio Engineers, International Convention Record*, vol. 7, 1959. Originally published in [Sha59b].

**Shannon:1993:CPN**

[Sha93j] Claude E. Shannon. Communication in the presence of noise. In Sloane and Wyner [SW93k], pages 160–172. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Decimal classification: 621.38. Original manuscript received by the Institute, July 23, 1940. Presented, 1948 IRE National Convention, New York, N. Y., March 24, 1948; and IRE New York Section, New York, N. Y., November 12, 1947. Originally published in [Sha49a].

**Shannon:1993:CTE**

[Sha93k] Claude E. Shannon. Communication theory — exposition of fundamentals. In Sloane and Wyner [SW93k], pages 173–176. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Published in *IRE Transactions Information Theory*, No. 1, Feb. 1950.

**Shannon:1993:CTS**

[Sha93l] Claude E. Shannon. Communication theory of secrecy systems. In Sloane and Wyner [SW93k], pages 84–143. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. The material in this paper appeared originally in a confidential report *Mathematical*

*Theory of Cryptography* dated Sept. 1, 1945, which has now been declassified. Originally published in [Sha49b].

**Shannon:1993:CAC**

[Sha93m] Claude E. Shannon. Computers and automata. In Sloane and Wyner [SW93k], pages 703–710. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Decimal classification: 621.385.2. Original manuscript received by the Institute, July 17, 1953. Originally published in [Sha53c].

**Shannon:1993:CAP**

[Sha93n] Claude E. Shannon. Computers and automation — progress and promise in the twentieth century. In Sloane and Wyner [SW93k], pages 836–846. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [Sha63a].

**Shannon:1993:CRF**

[Sha93o] Claude E. Shannon. Concavity of resistance functions. In Sloane and Wyner [SW93k], pages 784–785. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [SH56].

**Shannon:1993:CTR**

[Sha93p] Claude E. Shannon. Concavity of transmission rate as a function of input probabilities. In Sloane and Wyner [SW93k], page 460. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Bell Laboratories Memorandum, June 8, 1955 [Sha55b].

**Shannon:1993:ECB**

[Sha93q] Claude E. Shannon. Efficient coding of a binary source with one very infrequent symbol. In Sloane and Wyner [SW93k], pages 209–211. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Bell Laboratories Memorandum, Jan. 29, 1954. Originally published in [Sha54b].

**Shannon:1993:GPM**

[Sha93r] Claude E. Shannon. Game playing machines. In Sloane and Wyner [SW93k], pages 786–792. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Delivered at the 1955 Medal Day Meeting, October 19, 1955, in acceptance of the Stuart Ballantine Medal. Originally published in [Sha55a].

**Shannon:1993:GTP**

[Sha93s] Claude E. Shannon. General treatment of the problem of coding. In Sloane and Wyner [SW93k], pages 177–179. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Published in *IRE Transactions Information Theory*, No. 1, Feb. 1950. Originally published in [Sha53d].

**Shannon:1993:ITP**

[Sha93t] Claude E. Shannon. Information theory. In Sloane and Wyner [SW93k], pages 212–220. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Reprinted with permission from Encyclopaedia Brittanica, 14th edition, 1968 by Encyclopaedia Britannica, Inc. Originally published in [Sha68b].

**Shannon:1993:LTI**

[Sha93u] Claude E. Shannon. The lattice theory of information. In Sloane and Wyner [SW93k], pages 180–183. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Published in *IRE Transactions Information Theory*, No. 1, Feb. 1950. Originally published in [Sha53e].

**Shannon:1993:LVB**

[Sha93v] Claude E. Shannon. Letter to Vannevar Bush, February 16, 1939. In Sloane and Wyner [SW93k], pages 455–456. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [Sha39].

**Shannon:1993:LBEa**

[Sha93w] Claude E. Shannon. Lower bounds to error probability for coding on discrete memoryless channels. I. In Sloane and Wyner [SW93k], pages 385–423. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [SGB67a].

**Shannon:1993:LBEb**

[Sha93x] Claude E. Shannon. Lower bounds to error probability for coding on discrete memoryless channels. II. In Sloane and Wyner [SW93k], pages 424–454. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [SGB67b].

**Shannon:1993:MAS**

[Sha93y] Claude E. Shannon. Machine aid for switching circuit design. In Sloane and Wyner [SW93k], pages 699–702. ISBN 0-470-54424-4,

0-7803-0434-9. LCCN TK5101 .S448 1993. Decimal classification: 621.375.2R257. Original manuscript received by the Institute, May 28, 1953; revised manuscript received June 29, 1953. Originally published in [SM53].

**Shannon:1993:MTC**

[Sha93z] Claude E. Shannon. A mathematical theory of communication. In Sloane and Wyner [SW93k], pages 5–83. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [Sha48b, Sha48c].

**Shannon:1993:MTD**

[Sha93-27] Claude E. Shannon. Mathematical theory of the differential analyzer. In Sloane and Wyner [SW93k], pages 496–513. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. See [Sha41d].

**Shannon:1993:MRT**

[Sha93-28] Claude E. Shannon. Memory requirements in a telephone exchange. In Sloane and Wyner [SW93k], pages 667–673. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [Sha50d].

**Shannon:1993:MPS**

[Sha93-29] Claude E. Shannon. A method of power or signal transmission to a moving vehicle. In Sloane and Wyner [SW93k], pages 678–680. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Bell Laboratories Memorandum, July 19, 1950 [Sha50e].

**Shannon:1993:MML**

[Sha93-30] Claude E. Shannon. A mind-reading (?) machine. In Sloane and Wyner [SW93k], pages 688–690. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Bell Laboratories Memorandum, March 18, 1953 [Sha53g].

**Shannon:1993:NRL**

[Sha93-31] Claude E. Shannon. Network rings. In Sloane and Wyner [SW93k], pages 571–583. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Bell Laboratories Memorandum, June 11, 1948. Originally published in [Sha48d].

**Shannon:1993:NPO**

[Sha93-32] Claude E. Shannon. A note on a partial ordering for communication channels. In Sloane and Wyner [SW93k], pages 265–272. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [Sha58b].

**Shannon:1993:PCL**

[Sha93-33] Claude E. Shannon. The potentialities of computers. In Sloane and Wyner [SW93k], pages 691–694. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Bell Laboratories Memorandum, April 3, 1953 [Sha53h].

**Shannon:1993:PEP**

[Sha93-34] Claude E. Shannon. Prediction and entropy of printed English. In Sloane and Wyner [SW93k], pages 194–208. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [Sha51a].

**Shannon:1993:PMM**

[Sha93-35] Claude E. Shannon. Presentation of a maze-solving machine. In Sloane and Wyner [SW93k], pages 681–687. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Published in *Transactions 8th Cybernetics Conference*, Josiah Macy Jr. Foundation, 1952 [Sha51c].

**Shannon:1993:PEO**

[Sha93-36] Claude E. Shannon. Probability of error for optimal codes in a Gaussian channel. In Sloane and Wyner [SW93k], pages 279–324. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [Sha59c].

**Shannon:1993:PCP**

[Sha93-37] Claude E. Shannon. Programming a computer for playing chess. In Sloane and Wyner [SW93k], pages 637–656. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. First presented at, the National IRE Convention, March 9, 1949, New York, U.S.A. Originally published in [Sha50g].

**Shannon:1993:RAI**

[Sha93-38] Claude E. Shannon. The rate of approach to ideal coding. In Sloane and Wyner [SW93k], page 461. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Published in *Proceedings*

*Institute of Radio Engineers*, volume 43, 1955. Originally published in [Sha55c].

**Shannon:1993:RAS**

[Sha93-39] Claude E. Shannon. Realization of all 16 switching functions of two variables requires 18 contacts. In Sloane and Wyner [SW93k], pages 711–714. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Bell Laboratories Memorandum, Nov. 17, 1953. Originally published in [Sha53i].

**Shannon:1993:RDC**

[Sha93-40] Claude E. Shannon. Recent developments in communication theory. In Sloane and Wyner [SW93k], pages 190–193. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [Sha50i].

**Shannon:1993:RCC**

[Sha93-41] Claude E. Shannon. Review of *Cybernetics, or Control and Communication in the Animal and the Machine*, by Norbert Wiener. In Sloane and Wyner [SW93k], pages 872–873. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Proceedings Institute of Radio Engineers, volume 37, 1949. Originally published in [Sha49d].

**Shannon:1993:RDR**

[Sha93-42] Claude E. Shannon. Review of *Description of a Relay Calculator*, by the staff of the [Harvard] Computation Laboratory. In Sloane and Wyner [SW93k], page 874. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Proceedings Institute of Radio Engineers, volume 38, 1950. Originally published in [Sha50j].

**Shannon:1993:RTL**

[Sha93-43] Claude E. Shannon. Review of *Transformations on Lattices and Structures of Logic*, by stephen a. kiss. In Sloane and Wyner [SW93k], page 871. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Published in *Proceedings Institute of Radio Engineers*, volume 37, 1949 [Sha49e].

**Shannon:1993:SAJ**

[Sha93-44] Claude E. Shannon. Scientific aspects of juggling. In Sloane and Wyner [SW93k], pages 850–864. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [Sha80].

**Shannon:1993:SSS**

[Sha93-45] Claude E. Shannon. The simultaneous synthesis of $s$ switching functions of $n$ variables. In Sloane and Wyner [SW93k], pages 780–783. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Bell Laboratories Memorandum, June 8, 1955 [Sha55d].

**Shannon:1993:SER**

[Sha93-46] Claude E. Shannon. Some experimental results on the deflection mechanism. In Sloane and Wyner [SW93k], page 869. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Report to National Defense Research Committee, June 8, 1941. Originally published in [Sha41e].

**Shannon:1993:SGR**

[Sha93-47] Claude E. Shannon. Some geometrical results in channel capacity. In Sloane and Wyner [SW93k], pages 259–264. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Published in *Nachrichtentechnische Zeit*, vol. 10. 1957 [Sha56g].

**Shannon:1993:SRI**

[Sha93-48] Claude E. Shannon. Some results on ideal rectifier circuits. In Sloane and Wyner [SW93k], pages 772–779. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Bell Laboratories Memorandum, June 8, 1955. Originally published in [Sha55e].

**Shannon:1993:STI**

[Sha93-49] Claude E. Shannon. Some topics in information theory. In Sloane and Wyner [SW93k], pages 458–459. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [Sha52b].

**Shannon:1993:SDM**

[Sha93-50] Claude E. Shannon. A study of the deflection mechanism and some results on rate finders. In Sloane and Wyner [SW93k], pages 866–867. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Report to National Defense Research Committee, circa April 1941. Originally published in [Sha41f].

**Shannon:1993:SAR**

[Sha93-51] Claude E. Shannon. A symbolic analysis of relay and switching circuits. In Sloane and Wyner [SW93k], pages 471–495. ISBN

0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Published in *Transactions American Institute of Electrical Engineers*, vol. 57, 1938. (Paper number 3880, recommended by the AlEE committees on communication and basic sciences and presented at the AlEE summer convention, Washington, D.C., June 2024, 1938. Manuscript submitted March I, 1938; made available for preprinting May 27, 1938.) Originally published in [Sha38].

**Shannon:1993:SNN**

[Sha93-52] Claude E. Shannon. A symmetrical notation for numbers. In Sloane and Wyner [SW93k], pages 674–677. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [Sha50a].

**Shannon:1993:STS**

[Sha93-53] Claude E. Shannon. The synthesis of two-terminal switching circuits. In Sloane and Wyner [SW93k], pages 588–627. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [Sha49f].

**Shannon:1993:TCL**

[Sha93-54] Claude E. Shannon. A theorem on coloring the lines of a network. In Sloane and Wyner [SW93k], pages 584–587. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [Sha49g].

**Shannon:1993:TDL**

[Sha93-55] Claude E. Shannon. The theory and design of linear differential equation machines. In Sloane and Wyner [SW93k], pages 514–559. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Report to National Defense Research Council, January, 1942. Originally published in [Sha42].

**Shannon:1993:TIL**

[Sha93-56] Claude E. Shannon. Throbac I. In Sloane and Wyner [SW93k], pages 695–698. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Bell Laboratories Memorandum, April 9, 1953 [Sha53k].

**Shannon:1993:TCC**

[Sha93-57] Claude E. Shannon. Two-way communication channels. In Sloane and Wyner [SW93k], pages 351–384. ISBN 0-470-54424-4, 0-

7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [Sha61].

**Shannon:1993:UTM**

[Sha93-58] Claude E. Shannon. A universal Turing machine with two internal states. In Sloane and Wyner [SW93k], pages 733–741. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [Sha56h].

**Shannon:1993:ULR**

[Sha93-59] Claude E. Shannon. The use of the Lakatos–Hickman relay in a subscriber sender. In Sloane and Wyner [SW93k], page 865. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Bell Laboratories Memorandum, August 13, 1940 [Sha40b].

**Shannon:1993:NCA**

[Sha93-60] Claude E. Shannon. Von Neumann's contributions to automata theory. In Sloane and Wyner [SW93k], pages 831–835. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Published in *Bulletin American Mathematical Society*, volume 64, 1958 [Sha58c].

**Shannon:1993:ZEC**

[Sha93-61] Claude E. Shannon. The zero error capacity of a noisy channel. In Sloane and Wyner [SW93k], pages 221–238. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. Originally published in [Sha56i].

**Shannon:1997:MTC**

[Sha97] C. E. Shannon. The mathematical theory of communication. 1963. *M.D. Computing: Computers in Medical Practice*, 14(4):306–317, July/August 1997. CODEN MDCOE7. ISSN 0724-6811.

**Shannon:1998:CTS**

[Sha98a] C. E. Shannon. Communication theory of secrecy systems. 1945. *M.D. Computing: Computers in Medical Practice*, 15(1):57–64, January/February 1998. CODEN MDCOE7. ISSN 0724-6811. URL `https://www.ncbi.nlm.nih.gov/pubmed/9458664`.

**Shannon:1998:CPN**

[Sha98b] Claude E. Shannon. Communication in the presence of noise. *Proceedings of the IEEE*, 86(2):447–457, February 1998. CODEN

IEEPAD. ISSN 0018-9219 (print), 1558-2256 (electronic). Reprint of [Sha49a].

**Shannon:2001:MTC**

[Sha01] Claude E. Shannon. A mathematical theory of communication. *ACM SIGMOBILE Mobile Computing and Communications Review ($MC^2R$)*, 5(1):3–55, January 2001. CODEN MCCRFA. ISSN 1559-1662 (print), 1931-1222 (electronic). Reprinted for the Bell System Technical Journal with corrections.

**Shannon:2002:CSF**

[Sha02] Claude Elwood Shannon. Claude Shannon: Father of the Information Age. Web video, 2002. URL `http://www.youtube.com/watch?v=z2Whj_nL-x8`.

**Shannon:2007:SCSa**

[Sha07] Meg McGinity Shannon. Staying connected: Shannon's eleven. *Communications of the ACM*, 50(1):17–20, January 2007. CODEN CACMA2. ISSN 0001-0782 (print), 1557-7317 (electronic).

**Shannon:2014:CSD**

[Sha14] Claude Elwood Shannon. Claude Shannon demonstrates machine learning: Demonstration of early machine learning with "Theseus". Web video, 2014. URL `http://www.youtube.com/watch?v=vPKkXibQXGA`. Undated video.

**Shannon:2021:CSD**

[Sha21] Claude Shannon. A symbolic analysis of relay and switching circuits (1938). In *Ideas That Created the Future: Classic Papers of Computer Science* [Lew21], chapter 8, pages 71–78. ISBN 0-262-04530-3. LCCN Q124.6-127.2.

**Silver:2018:IRR**

[Sil18] Daniel Silver. Information, reimagined: [review of *Mind at Play: How Claude Shannon Invented the Information Age*. Jimmy Soni and Rob Goodman. 366 pp. Simon and Schuster, 2017. $27. *American Scientist*, 106(1):54, 2018. CODEN AMSCAC. ISSN 0003-0996 (print), 1545-2786 (electronic).

**SiqueirosBeltrones:1998:STS**

[Siq98] David Alfaro Siqueiros Beltrones. Statistical treatment of Shannon–Wiener's diversity index ($H'$); tests of normality for

sample values of diatom assemblages. *Oceanides*, 13(1):1–11, ???? 1998.

**Stern:2004:SNI**

[SJ04] Adrian Stern and Bahram Javidi. Shannon number and information capacity of three-dimensional integral imaging. *Journal of the Optical Society of America. A, Optics, image science, and vision*, 21(9):1602–1612, September 2004. CODEN JOAOD6. ISSN 1084-7529 (print), 1520-8532 (electronic).

**Starks:2001:CS**

[SK01] Scott A. Starks and Vladik Kreinovich. Claude E. Shannon (1916–2001). *Reliable Computing = Nadezhnye vychisleniia*, 7 (5):431–432, October 2001. CODEN RCOMF8. ISSN 1385-3139 (print), 1573-1340 (electronic). URL `http://www.springerlink.com/openurl.asp?genre=article&issn=1385-3139&volume=7&issue=5&spage=431`.

**Shi:2004:FSS**

[SK04] Qicun Shi and Sabre Kais. Finite size scaling for the atomic Shannon-information entropy. *Journal of Chemical Physics*, 121 (12):5611–5617, September 22, 2004. CODEN JCPSA6. ISSN 0021-9606 (print), 1089-7690 (electronic).

**Slack:1997:CSC**

[Sla97] W. V. Slack. Claude Shannon and communication theory. *M.D. Computing: Computers in Medical Practice*, 14(4):262–264, July/August 1997. CODEN MDCOE7. ISSN 0724-6811. URL `https://www.ncbi.nlm.nih.gov/pubmed/9230586`.

**Slepian:1974:KPD**

[Sle74] David Slepian, editor. *Key papers in the development of information theory*. IEEE Press selected reprint series. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1974. ISBN 0-87942-027-8, 0-87942-028-6 (paperback). vi + 463 pp. LCCN Q360 .S54.

**Shannon:1953:MAS**

[SM53] Claude E. Shannon and Edward F. Moore. Machine aid for switching circuit design. *Proceedings of the Institute of Radio Engineers*, 41(10):1348–1351, 1953. CODEN PIREAE. ISSN 0096-8390 (print), 2162-6634 (electronic). URL `http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=4051201`.

**Shannon:1956:AS**

[SM56] C. E. Shannon and J. McCarthy, editors. *Automata Studies*, volume AM-34 of *Annals of Mathematics Studies*. Princeton University Press, Princeton, NJ, USA, 1956. CODEN ANMAAH. ISBN 0-691-07916-1. ISSN 0066-2313. ix + 285 pp. German translation in [SM74].

**Shannon:1974:STA**

[SM74] C. E. Shannon and J. McCarthy, editors. *Studien zur Theorie der Automaten. (German) Automata Studies*. Rogner & Bernhard, Munich, West Germany, 1974. ISBN 3-8077-0001-3, 0-398-03003-0. xxxiii + 452 pp. LCCN ???? Edited by Franz Kaltenbeck and Peter Weibel with notes by Dieter Roth.

**Smith:2005:TMS**

[Smi05] S. W. Smith. Turing is from Mars, Shannon is from Venus: computer science and computer engineering. *IEEE Security & Privacy*, 3(2):66–69, March/April 2005. CODEN ???? ISSN 1540-7993 (print), 1558-4046 (electronic). URL `http://ieeexplore.ieee.org/iel5/8013/30742/01423965.pdf; http://ieeexplore.ieee.org/xpls/abs_all.jsp?isnumber=30742&arnumber=1423965&count=15&index=11`.

**Sommaruga:2009:FTI**

[Som09] Giovanni Sommaruga, editor. *Formal Theories of Information: From Shannon to Semantic Information Theory and General Concepts of Information*, volume 5363 of *Lecture Notes in Computer Science*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2009. CODEN LNCSD9. ISBN 3-642-00658-2 (print), 3-642-00659-0 (e-book). ISSN 0302-9743 (print), 1611-3349 (electronic). LCCN ???? URL `http://www.springerlink.com/content/978-3-642-00659-3`.

**Shlyakhtenko:2007:SMP**

[SS07] Dimitri Shlyakhtenko and Hanne Schultz. Shannon's monotonicity problem for free and classical entropy. *Proceedings of the National Academy of Sciences of the United States of America*, 104(39): 15254–15258, ???? 2007. CODEN PNASA6. ISSN 0027-8424 (print), 1091-6490 (electronic).

**Safinejad:2006:ASM**

[SSAK06] F. Safinejad, A. Shafiee, and M. Asghari-Khiavi. The application of Shannon's measure of information for a complex chemical sys-

tem. *Journal of Physical Chemistry. B. Condensed matter, materials, surfaces, interfaces & biophysical*, 110(25):12815–12819, June 29, 2006. CODEN JPCBFK. ISSN 1520-6106.

**Schug:2005:PFR**

[SSK+05] Jonathan Schug, Winfried-Paul Schuller, Claudia Kappen, J. Michael Salbaum, Maja Bucan, and Christian J. Stoeckert, Jr. Promoter features related to tissue specificity as measured by Shannon entropy. *Genome Biology*, 6(4):R33, ???? 2005. ISSN 1465-6914 (print), 1465-6914 (electronic).

**Sutton:1934:PSE**

[SSS34] R. M. Sutton, C. E. Shannon, and M. A. Scheier. Problems and Solutions: Elementary Problems: Solutions: E58. *American Mathematical Monthly*, 41(3):191–192, March 1934. CODEN AMMYAE. ISSN 0002-9890 (print), 1930-0972 (electronic).

**Strawn:2014:CSM**

[Str14] George Strawn. Claude Shannon: Mastermind of information theory. *IT Professional*, 16(6):70–72, November 2014. CODEN ITPMAFM. ISSN 1520-9202 (print), 1941-045X (electronic). URL `http://ieeexplore.ieee.org/document/6964910/`.

**Sugimoto:2013:ECB**

[Sug13] Mai Sugimoto. Edmund C. Berkeley as a popularizer and an educator of computers and symbolic logic. *Historia Scientiarum. Second Series. International Journal of the History of Science Society of Japan*, 23(1):1–23, ???? 2013. CODEN HISCDU. ISSN 0285-4821. URL `https://www.scopus.com/inward/record.uri?eid=2-s2.0-84886632972&partnerID=40&md5=20f06757e597278b7ea1ed009e2f627e`.

**Shannon:1949:MTC**

[SW49] Claude E. Shannon and Warren Weaver. *The Mathematical Theory of Communication*. University of Illinois Press, Urbana/Champaign, IL, USA, 1949. vii + 117 pp. LCCN TK5101.S528.

**Shannon:1963:MTC**

[SW63] Claude Elwood Shannon and Warren Weaver. *The Mathematical Theory of Communication*. University of Illinois Press, Urbana/Champaign, IL, USA, illini books edition, 1963. ISBN 0-252-72548-4. 125 pp. LCCN TK5101 .S528 1963.

**Shannon:1964:MTC**

[SW64] Claude Elwood Shannon and Warren Weaver. *The mathematical theory of communication*. University of Illinois Press, Urbana/ Champaign, IL, USA, 1964. 125 pp. LCCN TK5101 .S528 1964.

**Shannon:1969:MTC**

[SW69] Claude E. Shannon and Warren Weaver, editors. *The mathematical theory of communication*, volume IB 13 of *Illini books*. University of Illinois Press, Urbana/Champaign, IL, USA, paperback edition, 1969. ISBN 0-252-72548-4. 125 pp. LCCN TK5101 .S45 1969. Fourth printing.

**Shannon:1971:TMD**

[SW71] Claude E. Shannon and Warren Weaver. *La teoria matematica delle comunicazioni. (Italian) [The Mathematical Theory of Communication]*. Etas Kompass, Milan, Italy, 1971. xi + 144 pp.

**Shannon:1972:MTC**

[SW72] Claude Elwood Shannon and Warren Weaver. *The mathematical theory of communication*. University of Illinois Press, Urbana/ Champaign, IL, USA, 1972. ISBN 0-252-72548-4. viii + 127 pp. LCCN TK5101 .S45 1972. Fifth paperback printing.

**Shannon:1975:TMC**

[SW75a] Claude E. Shannon and Warren Weaver. *Théorie mathématique de la communication. (French) [The Mathematical Theory of Communication]*. Les Classiques des sciences humaines, Paris, France, 1975. ISBN ???? 188 pp. LCCN ???? URL `http://catalogue.bnf.fr/ark:/12148/cb34602882t/UNIMARC`. Preface by Abraham A. Moles. Translation by J. Cosnier, G. Dahan and S. Economidès.

**Shannon:1975:MTC**

[SW75b] Claude Elwood Shannon and Warren Weaver. *The mathematical theory of communication*. University of Illinois Press, Urbana/ Champaign, IL, USA, 1975. ISBN 0-252-72548-4 (paperback). 125 pp. LCCN TK5101 .S52 1975.

**Shannon:1976:MGI**

[SW76] Claude E. Shannon and Warren Weaver. *Mathematische Grundlagen der Informationstheorie. (German) [The Mathematical Theory of Communication]*. R. Oldenbourg, München, Germany,

1976. 143 pp. Übersetzt aus dem Englischen von Helmut Dressler, Scientia Nova.

**Shannon:1978:MTC**

[SW78] Claude E. Shannon and Warren Weaver. *The mathematical theory of communication*. University of Illinois Press, Urbana/ Champaign, IL, USA, 1978. ISBN 0-252-72548-4 (paperback). 125 pp. LCCN TK5101 .S45 1978. Seventh paperback printing.

**Shannon:1981:TMC**

[SW81] Claude E. Shannon and Warren Weaver. *Teoría matemática de la comunicación. (Spanish) [Mathematical theory of communication]*. Ediciones Forja, Madrid, Spain, 1981. ISBN 84-85880-07-2. 159 pp. LCCN ????

**Shannon:1983:TMD**

[SW83] Claude E. Shannon and Warren Weaver. *La teoria matematica delle comunicazioni. (Italian) [The Mathematical Theory of Communication]*. Etas Kompass, Milan, Italy, second edition, 1983. xi + 144 pp.

**Sloane:1993:AS**

[SW93a] N. J. A. Sloane and Aaron D. Wyner. Automata studies. In Sloane and Wyner [SW93k], pages 727–732. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. With a profile of Shannon by Anthony Liversidge (pp. xix–xxxiii).

**Sloane:1993:CSN**

[SW93b] N. J. A. Sloane and Aaron D. Wyner. Claude Shannon's no-drop juggling diorama. In Sloane and Wyner [SW93k], pages 847–849. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. With a profile of Shannon by Anthony Liversidge (pp. xix–xxxiii).

**Sloane:1993:CTI**

[SW93c] N. J. A. Sloane and Aaron D. Wyner. Communication theory information theory cryptography. In Sloane and Wyner [SW93k], pages 2–4. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. With a profile of Shannon by Anthony Liversidge (pp. xix–xxxiii).

**Sloane:1993:CCG**

[SW93d] N. J. A. Sloane and Aaron D. Wyner. Computers circuits games. In Sloane and Wyner [SW93k], pages 468–469. ISBN 0-470-54424-

4, 0-7803-0434-9. LCCN TK5101 .S448 1993. With a profile of Shannon by Anthony Liversidge (pp. xix–xxxiii).

**Sloane:1993:F**

[SW93e] N. J. A. Sloane and Aaron D. Wyner. Frontmatter. In Sloane and Wyner [SW93k], pages i–xliv. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. With a profile of Shannon by Anthony Liversidge (pp. xix–xxxiii).

**Sloane:1993:G**

[SW93f] N. J. A. Sloane and Aaron D. Wyner. Genetics. In Sloane and Wyner [SW93k], pages 888–889. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. With a profile of Shannon by Anthony Liversidge (pp. xix–xxxiii).

**Sloane:1993:NP**

[SW93g] N. J. A. Sloane and Aaron D. Wyner. Notes to Part A. In Sloane and Wyner [SW93k], pages 463–466. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. With a profile of Shannon by Anthony Liversidge (pp. xix–xxxiii).

**Sloane:1993:NPB**

[SW93h] N. J. A. Sloane and Aaron D. Wyner. Notes to Part B. In Sloane and Wyner [SW93k], pages 877–886. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. With a profile of Shannon by Anthony Liversidge (pp. xix–xxxiii).

**Sloane:1993:NPC**

[SW93i] N. J. A. Sloane and Aaron D. Wyner. Notes to Part C. In Sloane and Wyner [SW93k], pages 921–922. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. With a profile of Shannon by Anthony Liversidge (pp. xix–xxxiii).

**Sloane:1993:P**

[SW93j] N. J. A. Sloane and Aaron D. Wyner. Permissions. In Sloane and Wyner [SW93k], pages 923–924. ISBN 0-470-54424-4, 0-7803-0434-9. LCCN TK5101 .S448 1993. With a profile of Shannon by Anthony Liversidge (pp. xix–xxxiii).

**Sloane:1993:CESa**

[SW93k] N. J. A. (Neil James Alexander) Sloane and A. D. (Aaron D.) Wyner, editors. *Claude Elwood Shannon: collected papers*. IEEE

Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1993. ISBN 0-470-54424-4, 0-7803-0434-9. xliv + 924 pp. LCCN TK5101 .S448 1993. With a profile of Shannon by Anthony Liversidge (pp. xix–xxxiii).

**Sloane:1993:CESb**

[SW93l] N. J. A. (Neil James Alexander) Sloane and A. D. (Aaron D.) Wyner, editors. *Claude Elwood Shannon: miscellaneous writings*. Mathematical Sciences Research Center, AT&T Bell Laboratories, Murray Hill, NJ, USA, 1993. ???? pp. LCCN TK5101 .S449 1993.

**Shannon:1998:MTC**

[SW98] Claude Elwood Shannon and Warren Weaver. *The Mathematical Theory of Communication*. University of Illinois Press, Urbana/Champaign, IL, USA, 1998. ISBN 0-252-72546-8 (cloth), 0-252-72548-4 (paperback). ix + 125 pp. LCCN TK5101 .S45 1998. URL `http://www.press.uillinois.edu/books/catalog/67qhn3ym9780252725463.html`. Preface by Richard Blahut and Bruce Hajek.

**Szilard:1929:EET**

[Szi29] L. Szilard. Über die Entropieverminderung in einem thermodynamischen System bei Eingriffen intelligenter Wesen. (German) [On entropy reduction in a thermodynamic system by interference by intelligent subjects]. *Zeitschrift für Physik*, 53(11–12): 840–856, ???? 1929. CODEN ZEPYAA. ISSN 0044-3328. URL `http://adsabs.harvard.edu/abs/1929ZPhy...53..840S`. This paper contains Szilard's classic analysis of Maxwell's demon, and shows that the entropy of a unit of information is equal to $k \log 2$, foreshadowing Claude Shannon's famous 1948 work on "A Mathematical Theory of Communication". See also the later English translations [Szi64, Szi76].

**Szilard:1964:DET**

[Szi64] Leo Szilard. On the decrease of entropy in a thermodynamic system by the intervention of intelligent beings. *Behavioral Science*, 9(4):301–310, ???? 1964. CODEN BEHSAS. ISSN 0005-7940 (print), 1932-300X (electronic).

**Szilard:1976:ERT**

[Szi76] L. Szilard. On entropy reduction in a thermodynamic system by interference by intelligent subjects. *Zhurnal Physik*, 53:840–856,

February 1976. CODEN ???? ISSN ???? URL `http://adsabs.harvard.edu/abs/1976ZhPhy..53..840S`. Translation into English from *Zeitschrift für Phys. (West Germany)*, v. 53, 1929 p. 840–856 [Szi29].

**Thomsen:2009:SEC**

[Tho09] Samuel W. Thomsen. Some evidence concerning the genesis of Shannon's information theory. *Studies in History and Philosophy of Science Part A*, 40(1):81–91, March 2009. CODEN SHPSB5. ISSN 0039-3681 (print), 1879-2510 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0039368108001143`.

**Timpson:2002:ASI**

[Tim02] Christopher G. Timpson. The applicability of Shannon information in quantum mechanics and Zeilinger's foundational principle. *Philosophy of Science*, 70(5):1233–1244, December 2002. CODEN PHSCA6. ISSN 0031-8248 (print), 1539-767X (electronic). URL `http://www.jstor.org/stable/10.1086/377403`.

**Timpson:2003:SCI**

[Tim03] C. G. Timpson. On a supposed conceptual inadequacy of the Shannon information in quantum mechanics. *Studies in History and Philosophy of Modern Physics*, 34(3):441–468, September 2003. CODEN ???? ISSN 1355-2198 (print), 1879-2502 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S1355219803000376`.

**Tufan:2012:NID**

[TKL+12] Kadir Tufan, Sadık Kara, Fatma Latifoğlu, Sinem Aydin, Adem Kırış, and Ünsal Özkuvancı. Non-invasive diagnosis of stress urinary incontinence sub types using wavelet analysis, Shannon entropy and principal component analysis. *Journal of Medical Systems*, 36(4):2159–2169, August 2012. CODEN JMSYDA. ISSN 0148-5598 (print), 1573-689X (electronic).

**Tracz:2010:BRR**

[Tra10] Will Tracz. Book review: *Remarkable Engineers: From Riquet to Shannon* by Ioan James. *ACM SIGSOFT Software Engineering Notes*, 35(5):58, October 2010. CODEN SFENDP. ISSN 0163-5948 (print), 1943-5843 (electronic). URL `http://dl.acm.org/citation.cfm?doid=1838687.1862454`.

**Turitsyn:2012:NCC**

[TT12] Konstantin S. Turitsyn and Sergei K. Turitsyn. Nonlinear communication channels with capacity above the linear Shannon limit. *Optics Letters*, 37(17):3600–3602, September 1, 2012. CODEN OPLEDP. ISSN 1539-4794.

**Tropp:1987:AIM**

[TWA+87] Henry S. Tropp, Michael R. Williams, Isaac Auerbach, Irving S. Reed, John von Neumann, and Bobbi Mapstone. Anecdotes: Introduction; the MADDIDA; 1982 Claude E. Shannon Lecture: Application transforms to coding and related topics; the von Neumann letter; interview with Irving S. Reed. *Annals of the History of Computing*, 9(3/4):357–369, July/September 1987. CODEN AHCOE5. ISSN 0164-1239. URL `http://dlib.computer.org/an/books/an1987/pdf/a3357.pdf; http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=4640573; http://www.computer.org/annals/an1987/a3357abs.htm`.

**Ulam:1968:JN**

[UKTS68] S. Ulam, H. W. Kuhn, A. W. Tucker, and Claude E. Shannon. John von Neumann, 1903–1957. *Perspectives in American History*, 2(??):235–269, ???? 1968. CODEN ???? ISSN 0079-0990.

**Ulam:1969:JN**

[UKTS69] Stanisław M. Ulam, H. W. Kuhn, A. W. Tucker, and Claude E. Shannon. John von Neumann, 1903–1957. In Fleming and Bailyn [FB69], pages 235–268. ISBN 0-674-33411-6, 0-674-33412-4. LCCN E169.1 .F6.

**VandenHerik:1989:ICS**

[Van89] H. J. Van den Herik. An interview with Claude Shannon: September 25, 1980 in Linz, Austria. *ICCA Journal*, 12(4):221–226, ???? 1989.

**Verdu:1998:FYS**

[Ver98] S. Verdu. Fifty years of Shannon theory. *IEEE Transactions on Information Theory*, 44(6):2057–2078, October 1998. CODEN IETTAW. ISSN 0018-9448 (print), 1557-9654 (electronic).

**Waldrop:2001:DMJ**

[Wal01a] M. Mitchell Waldrop. *The Dream Machine: J. C. R. Licklider and the Revolution That Made Computing Personal*. The Sloan

technology series. Penguin Books, Harmondsworth, UK, 2001. ISBN 0-14-200135-X (paperback), 0-670-89976-3 (hardcover). 502 pp. LCCN QA76.17 .W35 2002. URL `http://catdir.loc.gov/catdir/toc/fy031/2001017985.html`.

**Waldrop:2001:CSR**

[Wal01b] W. Mitchell Waldrop. Claude Shannon: Reluctant father of the Digital Age. *MIT Technology Review*, ??(??):??, July 1, 2001. URL `http://www.technologyreview.com/s/401112/claude-shannon-reluctant-father-of-the-digital-age`.

**Wang:2012:OCP**

[WBB+12] E. Wang, P. Beiersdorfer, M. Bitter, L. F. Delgado-Aparicio, K. W. Hill, and N. Pablant. Optimization of the configuration of pixilated detectors based on the Shannon–Nyquist theory. *Review of Scientific Instruments*, 83(10):10E139, October 2012. CODEN RSINAK. ISSN 1089-7623.

**Wei:1999:MSW**

[WC99] Hong Wei and Wu Chengzhen. Modification of Shannon–Wiener index. *Journal of Tropical and Subtropical Botany*, 7(2):120–124, ???? 1999. ISSN 1005-3395.

**Weaver:1949:MC**

[Wea49] Warren Weaver. The mathematics of communication. *Scientific American*, 181(1):11–15, July 1949. CODEN SCAMAC. ISSN 0036-8733 (print), 1946-7087 (electronic). URL `http://www.nature.com/scientificamerican/journal/v181/n1/pdf/scientificamerican0749-11.pdf`.

**Weaver:1953:RCM**

[Wea53] Warren Weaver. Recent contributions to the mathematical theory of communication. *ETC: A Review of General Semantics*, 10(4):261–281, 1953. ISSN 0014-164X (print), 2168-9245 (electronic). URL `http://www.jstor.org/stable/42581364`.

**Weiss:1988:BOP**

[Wei88] Eric A. Weiss. Biographies: Oh, pioneers! *Annals of the History of Computing*, 10(4):348–361, October/December 1988. CODEN AHCOE5. ISSN 0164-1239. URL `http://dlib.computer.org/an/books/an1988/pdf/a4348.pdf`; `http://www.computer.org/annals/an1988/a4348abs.htm`.

**Wang:2009:SEB**

[WGB09] Yuan Wang, Hanna Geppert, and Jürgen Bajorath. Shannon entropy-based fingerprint similarity search strategy. *Journal of Chemical Information and Modeling*, 49(7):1687–1691, July 2009. CODEN JCISD8. ISSN 1549-9596 (print), 1549-960x (electronic).

**Whaland:1978:CCT**

[Wha78] Norman Whaland. A computer chess tutorial. *Byte Magazine*, 3 (10):168–??, October 1978. CODEN BYTEDJ. ISSN 0360-5280 (print), 1082-7838 (electronic).

**Wildes:1985:CEE**

[WL85] Karl L. Wildes and Nilo A. Lindgren. *A century of electrical engineering and computer science at MIT, 1882–1982*. MIT Press, Cambridge, MA, USA, 1985. ISBN 0-262-23119-0, 0-262-29103-7 (e-book). xi + 423 pp. LCCN TK210.M3 W55 1985.

**Wang:2012:SSE**

[WMS+12] Yingfeng Wang, Amir Manzour, Pooya Shareghi, Timothy I. Shaw, Ying-Wai Li, Russell L. Malmberg, and Liming Cai. Stable stem enabled Shannon entropies distinguish non-coding RNAs from random backgrounds. *BMC Bioinformatics*, 13(5S):S1–??, ???? 2012. CODEN BBMIC4. ISSN 1471-2105.

**Wrighton:1967:PSI**

[Wri67] R. F. Wrighton. The problem of statistical inference. II. the status of the error-correcting code approach relative to the Shannon theory. *Acta genetica et statistica medica*, 17(4):357–364, ???? 1967. ISSN 0567-7440.

**Wassermann:2010:ISE**

[WVB10] Anne Mai Wassermann, Martin Vogt, and Jürgen Bajorath. Iterative Shannon entropy — a methodology to quantify the information content of value range dependent data distributions. application to descriptor and compound selectivity profiling. *Molecular Informatics*, 29(5):432–440, ???? 2010. CODEN MIONBS. ISSN 1868-1743 (print), 1868-1751 (electronic).

**Yarrow:2012:FSI**

[YCS12] Stuart Yarrow, Edward Challis, and Peggy Series. Fisher and Shannon information in finite neural populations. *Neural Computation*, 24(7):1740–1780, July 2012. CODEN NEUCEB. ISSN 1530-888X.

**Yoo:2010:EQK**

[YLR+10] Jae-Won Yoo, Yong-Woo Lee, Jennifer L. Ruesink, Chang-Gun Lee, Chang-Soo Kim, Mi-Ra Park, Kon-Tak Yoon, In-Seo Hwang, Jun-Ho Maeng, Rutger Rosenberg, and Jae-Sang Hong. Environmental quality of Korean coasts as determined by modified Shannon–Wiener evenness proportion. *Environmental Monitoring and Assessment*, 170(1–4):141–157, ???? 2010. CODEN EMASDH. ISSN 0167-6369 (print), 1573-2959 (electronic).

**Yamazoe:2011:NES**

[YN11] Kenji Yamazoe and Andrew R. Neureuther. Numerical experiment of the Shannon entropy in partially coherent imaging by Koehler illumination to show the relationship to degree of coherence. *Journal of the Optical Society of America. A, Optics, image science, and vision*, 28(3):448–454, March 1, 2011. CODEN JOAOD6. ISSN 1520-8532.

**Yockey:2000:OLE**

[Yoc00] H. P. Yockey. Origin of life on earth and Shannon's theory of communication. *Computers and Chemistry*, 24(1):105–123, January 2000. CODEN COCHDK. ISSN 0097-8485 (print), 1879-0763 (electronic).

**Zachary:2016:CCS**

[Zac16] G. Pascal Zachary. Celebrating Claude Shannon [spectral lines]. *IEEE Spectrum*, 53(4):8, April 2016. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). URL `http://ieeexplore.ieee.org/document/7439577/`.

**Zaletel:2011:LTE**

[ZBM11] Michael P. Zaletel, Jens H. Bardarson, and Joel E. Moore. Logarithmic terms in entanglement entropies of 2d quantum critical points and Shannon entropies of spin chains. *Physical Review Letters*, 107(2):020402, July 8, 2011. CODEN PRLTAO. ISSN 1079-7114. URL `https://journals.aps.org/prl/abstract/10.1103/PhysRevLett.107.020402`.

**Zeeberg:2002:SIT**

[Zee02] Barry Zeeberg. Shannon information theoretic computation of synonymous codon usage biases in coding regions of human and mouse genomes. *Genome Research*, 12(6):944–955, ???? 2002. CODEN GEREFS. ISSN 1088-9051 (print), 1549-5469 (electronic).

**Zhang:2009:RBS**

[Zha09] Yi Zhang. Relations between Shannon entropy and genome order index in segmenting DNA sequences. *Physical Review E (Statistical physics, plasmas, fluids, and related interdisciplinary topics)*, 79(4 Pt 1):041918, April 2009. CODEN PLEEE8. ISSN 1539-3755 (print), 1550-2376 (electronic).

**Zorpette:1989:PGD**

[Zor89] Glenn Zorpette. Parkinson's gun director. *IEEE Spectrum*, 26 (4):43, April 1989. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic). URL `http://ieeexplore.ieee.org/document/24154/`.