1971 Index
IEEE Transactions on Systems, Man, and Cybernetics
Vol. SMC-1

This index covers all items - papers, correspondence, reviews, etc. - that appeared in this periodical during 1971, and items from prior years that were commented upon or corrected in 1971. The index is divided into an Author Index and a Subject Index, both arranged alphabetically.

The *Author Index* contains the primary entry for each item; this entry is listed under the name of the first author and includes coauthor names, title, location of the item, and notice of corrections and comments if any. Cross-references are given from each coauthor name to the name of the corresponding first author. The location of the item is specified by the journal name (abbreviated), year, month, inclusive pages, and microfiche code. [The microfiche code, given in parentheses following the inclusive pages, consists of four characters to be interpreted as follows: the first character identifies the microfiche number within the set of fiches for the issue; the second character identifies the row in which the first frame of the particular item is located; and the last two characters designate the position of that frame within the row.]

The *Subject Index* contains several entries for each item, each consisting of a subject heading, modifying phrase(s), first author's name, and location of the item. For information on coauthors, title, comments and corrections if any, etc., it is necessary to refer to the Author Index. Some generic subject headings are used in this index in addition to the usual technical headings, e.g., *Books* (books reviewed in this periodical), *Bibliographies* (both papers that are bibliographies and any other papers which contain more than 50 references), *Conferences* (technical meetings a substantial number of whose abstracts or papers have appeared in this periodical), and *Special Issues* (issues of this periodical devoted primarily to a specific subject). The Subject Index includes subject cross-references as required by the subject matter.

AUTHOR INDEX

A

Agarwal, Gyan C., *see* Gottlieb, Gerald L.; *T-SSC 70 Apr* 127-132 (1F05)
Agarwal, Gyan C., *see* Gottlieb, Gerald L.; *T-SMC 71 Oct* 379-383 (2C05)
Agrawala, Ashok K.; Recursive discriminant functions and unsupervised estimation (Abstr.); *T-SMC 71 Oct* 403-404 (2E05)
Ahmed, N. U., *see* Enarson, J. W.; *T-SMC 71 Jan* 83-84 (2D05)
Allen, A. D.; *T-SMC 71 Oct* 388-389 (2D02)
Comments, with author's reply, on Noton, David; A theory of visual pattern perception; *T-SSC 70 Oct* 349-357 (2D11)
Allen, D. R., *see* Martens, H. R.; *Merrill* (Columbus, OH) *1969*
Altman, Stanley M., E. J. Beltrami, Stephen S. Rappaport, and G. K. Schoepfle; Nonlinear programming model of crew assignments for household refuse collection (Corresp.); *T-SMC 71 Jul* 289-291 (2E03)
Anderson, Brian D. O., and John B. Moore; The Kalman-Bucy filter as a true time-varying Wiener filter; *T-SMC 71 Apr* 119-128 (1C05)
Arcelli, C., and S. Levialdi; Concavity extraction by parallel processing (Corresp.); *T-SMC 71 Oct* 394-396 (2D08)
Austin, Michael E., *see* Padden, James T.; *T-SMC 71 Apr* 178-182 (2C05)

B

Baba, Ismat S.; *T-SMC 71 Jul* 298-299 (2E12); *Review of* Rudwick, B. H.; Systems Analysis for Effective Planning; *Wiley* (New York, NY) *1969*
Badavas, Paul C., and George N. Saridis; A performance-adaptive self-organizing control of a class of distributed systems; *T-SMC 71 Apr* 105-110 (1B03)
Baram, Giora, *see* Jutila, Sakari T.; *T-SMC 71 Oct* 344-349 (1E06)
Barnard, R. D.; *T-SMC 71 Jul* 302 (2F04); *Review of* Holtzman, Jack M.; Nonlinear System Theory—A Functional Analysis Approach; *Prentice-Hall* (Englewood Cliffs, NJ) *1970*
Barron, Roger L.; *T-SMC 71 Jan* 86 (2D08)
Comments on Tilley, Elizabeth A.; On Barron's self-organizing control (Corresp.); *T-SMC 71 Jan* 84-85 (2D06)
Beltrami, E. J., *see* Altman, Stanley M.; *T-SMC 71 Jul* 289-291 (2E03)
Bergenthal, James; Preferred pushbutton switch operating forces (Corresp.); *T-SMC 71 Oct* 385-387 (2C11)
Billinton, Roy; Power System Reliability Evaluation; *Gordon and Breach* (New York, NY) *1970. Review by* Bonaert, A., and Antti J. Koivo; *T-SMC 71 Oct* 406-407 (2E06)
Bonaert, A., and Antti J. Koivo; *T-SMC 71 Oct* 406-407 (2E06); *Review of* Billinton, Roy; Power System Reliability Evaluation; *Gordon and Breach* (New York, NY) *1970*
Bracchi, Giampio; On the generation of system partitions for large-scale integration; *T-SMC 71 Oct* 325-330 (1C11)
Breipohl, Arthur M., *see* Cunningham, David R.; *T-SMC 71 Jan* 19-23 (1C09)
Breipohl, Arthur M., *see* Shanmugam, K.; *T-SMC 71 Jul* 223-229 (1D09)
Brockett, Roger W.; Finite Dimensional Linear Systems; *Wiley* (New York, NY) *1970. Review by* Vidyasagar, M.; *T-SMC 71 Jan* 96-97 (2E06)
Bryant, Lynwood; *T-SMC 71 Oct* 407 (2E09); *Review of* Mayr, O.; The Origins of Feedback Control; *MIT* (Cambridge, MA) *1971*
Bryson, A. E., and Y. C. Ho; Applied Optimal Control; *Blaisdell* (Waltham, MA) *1969. Review by* Tabak, Daniel; *T-SMC 71 Jan* 98-99 (2E08)
Burton, Robert W.; On affecting the long-term air quality in the San Francisco Bay Area; *T-SMC 71 Oct* 307-313 (1B05)
Bussard, David L., and Richard D. Wilmot; Queueing requirements in an automatic radar target detection system operating with a narrow bandwidth data link; *T-SSC 70 Apr* 81-91 (1B07)
Correction, T-SMC 71 Jan 82 (2D04)
Butler, George A.; Clustering utilizing a computer output display (Abstr.); *T-SMC 71 Oct* 398 (2D12)

C

Caceres, Cesear A., *see* Weihrer, A. L.; *T-SMC 71 Oct* 401 (2E03)
Calvert, Thomas W.; Meeting biomedical signal processing needs with a computer network (Abstr.); *T-SMC 71 Oct* 400 (2E02)
Carayannopoulos, George, *see* Patrick, Edward A.; *T-SMC 71 Oct* 404 (2E06)
Carl, Joseph W.; *T-SMC 71 Oct* 387-388 (2D01)
Comments, with author's reply, on Toussaint, Godfried T.; On a simple Minkowski metric classifier (Corresp.); *T-SSC 70 Oct* 360-362 (2E10)
Chandrasekaran, Balakrishnan, *see* Harley, Thomas J., Jr.; *T-SMC 71 Oct* 391-394 (2D05)
Chang, S. K., and G. L. Shelton; Two algorithms for multiple-view binary pattern reconstruction (Corresp.); *T-SMC 71 Jan* 90-94 (2D12)
Chao, Lincoln L.; Statistics: Methods and Analyses *and* Solution Manual; *McGraw-Hill* (New York, NY) *1969. Review by* Romig, Harry G.; *T-SMC Apr 188-189* (2D03)
Cooper, David B.; Summary of some past and recent work (Abstr.); *T-SMC 71 Oct* 398 (2D12)
Costello, Joseph P.; Asymptotic Bayesian approaches to unsupervised estimation (Abstr.); *T-SMC 71 Oct* 404 (2E06)
Cover, Thomas M.; Computational complexity aspects of dimensionaltiy reduction and classification (Abstr.); *T-SMC 71 Oct* 402 (2E04)
Crisan, Ovidu, and Thomas J. Higgins; *T-SMC 71 Jul* 300 (2F02); *Review of* Dimo, Paul; Nodal Analysis of Power Systems; *Editura Academiei Republica Socialiste Romania* (Bucharest, Romania) *1968*
Cunningham, David R., and Arthur M. Breipohl; Empirical Bayesian learning; *T-SMC 71 Jan* 19-23 (1C09)

D

Dimo, Paul; Nodal Analysis of Power Systems; *Editura Academiei Republica Socialiste Romania* (Bucharest, Romania) *1968. Review by* Crisan, Ovidu, and Thomas J. Higgins; *T-SMC 71 Jul* 300 (2F02)
Dinstein, Its'Hak, *see* Haralick, Robert M.; *T-SMC 71 Jul* 275-289 (2D01)
Drucker, Harris, *see* Masters, Charles O.; *T-SMC Apr 182-184* (2C09)
Dutton, John M., and William H. Starbuck; Computer simulation models of human behavior: A history of an intellectual technology; *T-SMC 71 Apr* 128-171 (1D02)

E

Enarson, J. W., Vembu Gourishankar, and N. U. Ahmed; *T-SMC 71 Jan* 83-84 (2D05)
Comments on Patterson, J. D., and Baxter F. Womack; An adaptive pattern classification system; *T-SSC 66 Aug* 62-67
Epstein, Bernard; Linear Functional Analysis; *Saunders* (Philadelphia, PA) *1970. Review by* Vidyasagar, M.; *T-SMC 71 Jan* 94-95 (2E04)
Evans, Thomas G.; The 'linguistic approach' to pattern recognition or 'what price generality'? (Abstr.); *T-SMC 71 Oct* 398 (2D12)

F

Ferrell, William R., and John N. Warfield; Editorial; *T-SMC 71 Jan* 1 (1B03)
Freedy, Amos, Frederick C. Hull, Luigi F. Lucaccini, and John Lyman; A computer-based learning system for remote manipulator control; *T-SMC 71 Oct* 356-363 (1F06)
Fu, King-Sun, *see* Gilstad, Dennis W.; *T-SMC 71 Jul* 261-266 (2B11)

G

Gilstad, Dennis W., and King-Sun Fu; Two-dimensional adaptive model of a human controller using pattern recognition techniques; *T-SMC 71 Jul* 261-266 (2B11)
Gitman, Israel; Summary of recent work (Abstr.); *T-SMC 71 Oct* 399 (2E01)
Glorioso, Robert M., and G. R. Grueneich; A training algorithm for systems described by stochastic transition matrices (Corresp.); *T-SMC 71 Jan* 86-87 (2D08)

Gold, Bernard, and Charles M. Rader; Digital Processing of Signals; *McGraw-Hill* (New York, NY) *1969. Review by* Sablatash, Mike, and Thomas J. Higgins; *T-SMC 71 Jan* 95-96 (2E05)
Gottlieb, Gerald L., Gyan C. Agarwal, and Lawrence Stark; Studies in postural control systems—Part III: A muscle spindle model; *T-SSC 70 Apr* 127-132 (1F05)
Correction, T-SMC 71 Jan 18 (1C08)
Gottlieb, Gerald L., and Gyan C. Agarwal; Control and regulation of the human motor system; *T-SMC 71 Oct* 379-383 (2C05)
Gourishankar, Vembu, *see* Enarson, J. W.; *T-SMC 71 Jan* 83-84 (2D05)
Griscik, M. P., *see* Sinha, Naresh K.; *T-SMC 71 Oct* 338-344 (1D12)
Grueneich, G. R., *see* Glorioso, Robert M.; *T-SMC 71 Jan* 86-87 (2D08)
Gupta, Naresh N.; An iterative method for computation of generalized inverse and matrix rank (Corresp.); *T-SMC 71 Jan* 89-90 (2D11)

H

Haimes, Yacov Y., Leon S. Lasdon, and David A. Wismer; On a bicriterion formulation of the problems of integrated system identification and system optimization (Corresp.); *T-SMC 71 Jul* 296-297 (2E10)
Halter, A. N., *see* Manetsch, Thomas J.; *T-SMC 71 Jan* 31-43 (1D09)
Happ, Harvey H.; Diakoptics and Networks; *Academic Press* (New York, NY) *1971. Review by* Undrill, J. M.; *T-SMC 71 Oct* 405-406 (2E07)
Happ, Harvey H.; *T-SMC 71 Oct* 407-408 (2E09); *Review of* Miller, R. H.; Power System Operation; *McGraw-Hill* (New York, NY) *1970*
Haralick, Robert M., and Its'Hak Dinstein; An iterative clustering procedure; *T-SMC 71 Jul* 275-289 (2D01)
Haralick, Robert M.; Summary of clustering results (Abstr.); *T-SMC 71 Oct* 399-400 (2E01)
Hardy, Lyndon M., Edward R. Omberg, James W. Watson, and George E. Mager; Using the Huffman code for sequential diagnosis (Corresp.); *T-SMC 71 Oct* 389-391 (2D03)
Harley, Thomas J., Jr., Kenneth G. Salter, and Balakrishnan Chandrasekaran; Variable length vector pattern recognition (Corresp.); *T-SMC 71 Oct* 391-394 (2D05)
Harmuth, H. F.; Transmission of Information by Orthogonal Functions; *Springer* (New York, NY) *1970. Review by* Lee, Joseph D.; *T-SMC 71 Apr* 188 (2D03)
Harris, Dale A., and Lawrence Stark; Information rate and capacity in a crayfish photoreceptor nerve channel; *T-SMC 71 Jan* 67-77 (2C01)
Hayenga, Marvin L., *see* Manetsch, Thomas J.; *T-SMC 71 Jan* 31-43 (1D09)
Higgins, Thomas J., *see* Sablatash, Mike; *T-SMC 71 Jan* 95-96 (2E05)
Higgins, Thomas J., *see* Crisan, Ovidu; *T-SMC 71 Jul* 300 (2F02)
Higuchi, Seihaku, *see* Tamura, Shinichi; *T-SMC 71 Jan* 61-66 (2B07)
Holtzman, Jack M.; Nonlinear System Theory—A Functional Analysis Approach; *Prentice-Hall* (Englewood Cliffs, NJ) *1970. Review by* Barnard, R. D.; *T-SMC 71 Jul* 302 (2F04)
Ho, Y. C., *see* Bryson, A. E.; *Blaisdell* (Waltham, MA) *1969*
Hull, Frederick C., *see* Freedy, Amos; *T-SMC 71 Oct* 356-363 (1F06)
Hussain, A. B. Shahidul, *see* Toussaint, Godfried T.; *T-SMC 71 Apr* 186-187 (2D01)

I

IEEE G-SMC; Systems Science and Cybernetics Conference; *T-SMC 71 Oct*
Ivakhnenko, A. G.; Polynomial theory of complex systems; *T-SMC 71 Oct* 364-378 (2B02). Preface by Anthony N. Mucciardi (Ed.)

J

Jain, Ramesh C.; *T-SMC 71 Jul* 301 (2F03); *Review of* McMillan, Claude, Jr.; Mathematical Programming; *Wiley* (New York, NY) *1970*
Jones, G. Melvill, *see* Sugie, Noboru; *T-SMC 71 Jul* 251-260 (2B01)
Jutila, Sakari T., and Giora Baram; A user-oriented evaluation of a time-shared computer system; *T-SMC 71 Oct* 344-349 (1E06)

K

Kaminuma, Tsuguchika, and Satosi Watanabe; Fast-converging adaptive algorithms for well-balanced separating linear classifier (Abstr.); *T-SMC 71 Oct* 403 (2E05)
Kanal, Laveen N.; Dependence of dimensionality reduction and classification on structure (Abstr.); *T-SMC 71 Oct* 402-403 (2E04)
Kawamura, Joseph G.; Automatic recognition of changes in urban development from aerial photographs; *T-SMC 71 Jul* 230-239 (1E04)
Koivo, Antti J., *see* Bonaert, A.; *T-SMC 71 Oct* 406-407 (2E06)
Krutko, P. D.; Statistical Dynamics of Sampled Data Systems; *Elsevier* (New York, NY) *1969. Review by* Tait, K. E.; *T-SMC 71 Apr* 189-190 (2D04)
Kulikowski, Casimir A.; Optimal coordinate representations and dimensionality reduction (Abstr.); *T-SMC 71 Oct* 401-402 (2E03)

L

Lainiotis, Demetrios G., and Sung K. Park; Probability of error bounds (Corresp.); *T-SMC 71 Apr* 175-178 (2C02)
Langhaar, H. L.; *T-SMC 71 Oct* 408 (2E10); *Review of* Leipholz, H.; Stability Theory; *Academic Press* (New York, NY) *1970*
Larson, Robert E.; State Increment Dynamic Programming; *Elsevier* (New York, NY) *1968. Review by* Tabak, Daniel; *T-SMC 71 Jan* 97-98 (2E07)
Lasdon, Leon S.; Optimization Theory of Large Systems; *Macmillan* (New York, NY) *1970. Review by* Tabak, Daniel; *T-SMC 71 Jul* 300-301 (2F02)
Lasdon, Leon S., *see* Haimes, Yacov Y.; *T-SMC 71 Jul* 296-297 (2E10)
Ledley, Robert S.; Automatic pattern recognition for clinical medicine (Abstr.); *T-SMC 71 Oct* 400 (2E02)
Lee, Joseph D.; *T-SMC 71 Apr* 188 (2D03); *Review of* Harmuth, H. F.; Transmission of Information by Orthogonal Functions; *Springer* (New York, NY) *1970*
Leipholz, H.; Stability Theory; *Academic Press* (New York, NY) *1970. Review by* Langhaar, H. L.; *T-SMC 71 Oct* 408 (2E10)
Levialdi, S., *see* Arcelli, C.; *T-SMC 71 Oct* 394-396 (2D08)
Levialdi, Stefano; Parallel pattern processing (Corresp.); *T-SMC 71 Jul* 292-296 (2E06)
Levy, D. M., *see* Nelson, G. D.; *T-SSC 68 Jul* 145-150
Lin, Jin L., and Andrew P. Sage; Algorithms for discrete sequential maximum likelihood bias estimation and associated error analysis; *T-SMC 71 Oct* 314-324 (1B12)
Lipkin, Lewis; Problems of complexity and variability in biological imaging (Abstr.); *T-SMC 71 Oct* 397 (2D11)
Lucaccini, Luigi F., *see* Freedy, Amos; *T-SMC 71 Oct* 356-363 (1F06)
Lyman, John, *see* Freedy, Amos; *T-SMC 71 Oct* 356-363 (1F06)

M

Mager, George E., *see* Hardy, Lyndon M.; *T-SMC 71 Oct* 389-391 (2D03)
Manetsch, Thomas J., Marvin L. Hayenga, and A. N. Halter; Simulation of Nigerian development: Northern region model; *T-SMC 71 Jan* 31-43 (1D09)
Martens, H. R., and D. R. Allen; Introduction to Systems Theory; *Merrill* (Columbus, OH) *1969. Review by* Vidale, Richard F.; *T-SMC 71 Jan* 94 (2E04)
Martin, W. C.; On obtaining separating hyperplanes via linear programming (Corresp.); *T-SMC 71 Jan* 87-88 (2D09)
Masters, Charles O., and Harris Drucker; Observations on direct search procedures (Corresp.); *T-SMC Apr 182-184* (2C09)
Mayr, O.; The Origins of Feedback Control; *MIT* (Cambridge, MA) *1971. Review by* Bryant, Lynwood; *T-SMC 71 Oct* 407 (2E09)
McFarlan, F. Warren, James L. McKenney, and John A. Seiler; The Management Game: Simulated Decision Making *and* Teacher's Manual; *Macmillan* (New York, NY) *1970. Review by* Nadler, Gerald; *T-SMC 71 Jan* 97 (2E07)
McKenney, James L., *see* McFarlan, F. Warren; *Macmillan* (New York, NY) *1970*
McMillan, Claude, Jr.; Mathematical Programming; *Wiley* (New York, NY) *1970. Review by* Jain, Ramesh C.; *T-SMC 71 Jul* 301 (2F03)
Meisel, William S.; Indirect methods for dimensionality reduction and classification (Abstr.); *T-SMC 71 Oct* 402 (2E04)
Melsa, James L., *see* Sage, Andrew P.; *McGraw-Hill* (New York, NY) *1971*
Miller, R. H.; Power System Operation; *McGraw-Hill* (New York, NY) *1970. Review by* Happ, Harvey H.; *T-SMC 71 Oct* 407-408 (2E09)
Monsen, Peter; Linear estimation in an unknown quasi-stationary environment; *T-SMC 71 Jul* 216-222 (1D02)
Moore, John B., *see* Anderson, Brian D. O.; *T-SMC 71 Apr* 119-128 (1C05)

N

Nadler, Gerald; *T-SMC 71 Jan* 97 (2E07); *Review of* McFarlan, F. Warren, James L. McKenney, and John A. Seiler; The Management Game: Simulated Decision Making *and* Teacher's Manual; *Macmillan* (New York, NY) *1970*
Nagy, George; Anticipating data from the Earth Resources Technology Satellites (Abstr.); *T-SMC 71 Oct* 397 (2D11)
Nelson, G. D., and D. M. Levy; A dynamic programming approach to the selection of pattern features; *T-SSC 68 Jul* 145-150
Comments (with authors' reply) by Toussaint, Godfried T., and A. B. Shahidul Hussain; *T-SMC 71 Apr* 186-187 (2D01)
Noton, David; A theory of visual pattern perception; *T-SSC 70 Oct* 349-357 (2D11)
Comments (with author's reply) by Allen, A. D.; *T-SMC 71 Oct* 388-389 (2D02)

O

Oda, Moriya, Baxter F. Womack, and Kenji Tsubouchi; A pattern recognizing study of palm reading (Corresp.); *T-SMC 71 Apr* 171-175 (2B10)
Omberg, Edward R., *see* Hardy, Lyndon M.; *T-SMC 71 Oct* 389-391 (2D03)

P

Padden, James T., and Michael E. Austin; A pattern recognition scheme using random pulse sequences (Corresp.); *T-SMC 71 Apr* 178-182 (2C05)
Pandit, Madhukar; *T-SMC 71 Oct* 408 (2E10); *Review of* Willems, J. L.; Stability Theory of Dynamical Systems; *Wiley & Sons* (New York, NY) *1970*
Park, Sung K., *see* Lainiotis, Demetrios G.; *T-SMC 71 Apr* 175-178 (2C02)
Patrick, Edward A.; Introduction to 1970 workshop on pattern recognition; *T-SMC 71 Oct* 397 (2D11)
Patrick, Edward A.; Problem dependent clustering (Abstr.); *T-SMC 71 Oct* 399 (2E01)
Patrick, Edward A., and George Carayannopoulos; Relationships among Bayes', decision directed, maximum likelihood and stochastic approximation procedures (Abstr.); *T-SMC 71 Oct* 404 (2E06)
Patterson, J. D., and Baxter F. Womack; An adaptive pattern classification system; *T-SSC 66 Aug* 62-67
Comments by Enarson, J. W., Vembu Gourishankar, and N. U. Ahmed; *T-SMC 71 Jan* 83-84 (2D05)
Pearl, Judea; Application of Walsh transform to statistical analysis; *T-SMC 71 Apr* 111-119 (1B09)
Pfaltz, John L.; Web grammars and picture description (Abstr.); *T-SMC 71 Oct* 397-398 (2D11)
Pierre, D. A.; Optimization Theory with Applications; *Wiley* (New York, NY) *1969. Review by* Tabak, Daniel; *T-SMC 71 Jan* 98-99 (2E08)
Porter, Brian; Synthesis of Dynamical Systems; *Barnes and Noble* (New York, NY) *1969. Review by* Tait, K. E.; *T-SMC 71 Apr* 191 (2D06)

Q

Quarmby, David J., and John Rastall; Experiments on handwritten numeral classification; *T-SMC 71 Oct* 331-338 (1D05)

R

Rader, Charles M., *see* Gold, Bernard; *McGraw-Hill* (New York, NY) *1969*
Rappaport, Stephen S., *see* Altman, Stanley M.; *T-SMC 71 Jul* 289-291 (2E03)
Rastall, John, *see* Quarmby, David J.; *T-SMC 71 Oct* 331-338 (1D05)
Riseman, Edward M.; Logical networks for feature extraction; *T-SMC 71 Jan* 43-55 (1E09)
Romig, Harry G.; *T-SMC Apr 188-189* (2D03); *Review of* Chao, Lincoln L.; Statistics: Methods and Analyses *and* Solution Manual; *McGraw-Hill* (New York, NY) *1969*

Rosenfeld, Azriel; Introduction to topics in image processing (Abstr.); *T-SMC 71 Oct* 397 (2D11)
Rudwick, B. H.; Systems Analysis for Effective Planning; *Wiley* (New York, NY) *1969. Review by* Baba, Ismat S.; *T-SMC 71 Jul* 298-299 (2E12)
Runyan, Harry M.; Cybernetics of economic systems; *T-SMC 71 Jan* 8-18 (1B10)

S

Sablatash, Mike, and Thomas J. Higgins; *T-SMC 71 Jan* 95-96 (2E05); *Review of* Gold, Bernard, and Charles M. Rader; Digital Processing of Signals; *McGraw-Hill* (New York, NY) *1969*
Sage, Andrew P., and James L. Melsa; Estimation Theory with Applications to Communications and Control; *McGraw-Hill* (New York, NY) *1971. Review by* Steinway, W. J.; *T-SMC 71 Oct* 405 (2E07)
Sage, Andrew P., *see* Lin, Jin L.; *T-SMC 71 Oct* 314-324 (1B12)
Salter, Kenneth G., *see* Welch, John R.; *T-SMC 71 Jan* 24-30 (1D02)
Salter, Kenneth G., *see* Harley, Thomas J., Jr.; *T-SMC 71 Oct* 391-394 (2D05)
Sammon, John W., Jr.; Interactive pattern analysis and recognition (Abstr.); *T-SMC 71 Oct* 400-401 (2E02)
Saridis, George N., *see* Badavas, Paul C.; *T-SMC 71 Apr* 105-110 (1B03)
Schoepfle, G. K., *see* Altman, Stanley M.; *T-SMC 71 Jul* 289-291 (2E03)
Schwartz, Stuart; Learning a discriminant function is density estimation (Abstr.); *T-SMC 71 Oct* 403 (2E05)
Scott, Alwyn C.; Tunnel diode arrays for information processing and storage; *T-SMC 71 Jul* 267-275 (2C05)
Seiler, John A., *see* McFarlan, F. Warren; *Macmillan* (New York, NY) *1970*
Shanmugam, K., and Arthur M. Breipohl; An error correcting procedure for learning with an imperfect teacher; *T-SMC 71 Jul* 223-229 (1D09)
Shelton, G. L., *see* Chang, S. K.; *T-SMC 71 Jan* 90-94 (2D12)
Sinha, Naresh K., and M. P. Griscik; A stochastic approximation method; *T-SMC 71 Oct* 338-344 (1D12)
Smith, James D., *see* Terdiman, Joseph; *T-SMC 71 Jul* 239-251 (1F01)
Smith, John L.; Markov decisions on a partitioned state space; *T-SMC 71 Jan* 55-60 (2B01)
Starbuck, William H., *see* Dutton, John M.; *T-SMC 71 Apr* 128-171 (1D02)
Stark, Lawrence, *see* Gottlieb, Gerald L.; *T-SSC 70 Apr* 127-132 (1F05)
Stark, Lawrence, *see* Harris, Dale A.; *T-SMC 71 Jan* 67-77 (2C01)
Stark, Lawrence, *see* Terdiman, Joseph; *T-SMC 71 Jul* 239-251 (1F01)
Steinway, W. J.; *T-SMC 71 Oct* 405 (2E07); *Review of* Sage, Andrew P., and James L. Melsa; Estimation Theory with Applications to Communications and Control; *McGraw-Hill* (New York, NY) *1971*
Sugie, Noboru; A model of predictive control in visual target tracking; *T-SMC 71 Jan* 2-7 (1B04)
Sugie, Noboru, and G. Melvill Jones; A model of eye movements induced by head rotation; *T-SMC 71 Jul* 251-260 (2B01)

T

Tabak, Daniel; *T-SMC 71 Jan* 97-98 (2E07); *Review of* Larson, Robert E.; State Increment Dynamic Programming; *Elsevier* (New York, NY) *1968*
Tabak, Daniel; *T-SMC 71 Jan* 98-99 (2E08); *Review of* Pierre, D. A.; Optimization Theory with Applications; *Wiley* (New York, NY) *1969*
Tabak, Daniel; *T-SMC 71 Jul* 300-301 (2F02); *Review of* Lasdon, Leon S.; Optimization Theory of Large Systems; *Macmillan* (New York, NY) *1970*
Tait, K. E.; *T-SMC 71 Apr* 189-190 (2D04); *Review of* Krutko, P. D.; Statistical Dynamics of Sampled Data Systems; *Elsevier* (New York, NY) *1969*
Tait, K. E.; *T-SMC 71 Apr* 191 (2D06); *Review of* Porter, Brian; Synthesis of Dynamical Systems; *Barnes and Noble* (New York, NY) *1969*
Tamura, Shinichi, Seihaku Higuchi, and Kokichi Tanaka; Pattern classification based on fuzzy relations; *T-SMC 71 Jan* 61-66 (2B07)
Tanaka, Kokichi, *see* Tamura, Shinichi; *T-SMC 71 Jan* 61-66 (2B07)
Terdiman, Joseph, James D. Smith, and Lawrence Stark; Dynamic analysis of the pupil with light and electrical stimulation; *T-SMC 71 Jul* 239-251 (1F01)
Thomet, Michel A.; A user-oriented freight railroad operating policy; *T-SMC 71 Oct* 349-356 (1E11)
Tilley, Elizabeth A.; On Barron's self-organizing control (Corresp.); *T-SMC 71 Jan* 84-85 (2D06)
Comments by Barron, Roger L.; *T-SMC 71 Jan* 86 (2D08)
Toussaint, Godfried T.; On a simple Minkowski metric classifier (Corresp.); *T-SSC 70 Oct* 360-362 (2E10)
Comments (with author's reply) by Carl, Joseph W.; *T-SMC 71 Oct* 387-388 (2D01)
Toussaint, Godfried T., and A. B. Shahidul Hussain; *T-SMC 71 Apr* 186-187 (2D01)
Comments, with authors' reply, on Nelson, G. D., and D. M. Levy; A dynamic programming approach to the selection of pattern features; *T-SSC 68 Jul* 145-150
Toussaint, Godfried T.; Some functional lower bounds on the expected divergence for multihypothesis pattern recognition, communication, and radar systems (Corresp.); *T-SMC 71 Oct* 384-385 (2C10)
Tribus, Myron; Rational Descriptions, Decisions and Designs; *Pergamon* (New York, NY) *1969. Review by* Vidale, Richard F.; *T-SMC 71 Jan* 95 (2E05)
Tsubouchi, Kenji, *see* Oda, Moriya; *T-SMC 71 Apr* 171-175 (2B10)

U

Uesaka, Yoshinori; Construction of a complex-valued nonlinear discriminant function for pattern recognition; *T-SMC 71 Jul* 194-215 (1B04)
Undrill, J. M.; *T-SMC 71 Oct* 405-406 (2E07); *Review of* Happ, Harvey H.; Diakoptics and Networks; *Academic Press* (New York, NY) *1971*

V

Vetter, William J.; An extension to gradient matrices (Corresp.); *T-SMC 71 Apr* 184-186 (2C11)
Vidale, Richard F.; *T-SMC 71 Jan* 94 (2E04); *Review of* Martens, H. R., and D. R. Allen; Introduction to Systems Theory; *Merrill* (Columbus, OH) *1969*
Vidale, Richard F.; *T-SMC 71 Jan* 95 (2E05); *Review of* Tribus, Myron; Rational Descriptions, Decisions and Designs; *Pergamon* (New York, NY) *1969*
Vidyasagar, M.; *T-SMC 71 Jan* 94-95 (2E04); *Review of* Epstein, Bernard; Linear Functional Analysis; *Saunders* (Philadelphia, PA) *1970*
Vidyasagar, M.; *T-SMC 71 Jan* 96-97 (2E06); *Review of* Brockett, Roger W.; Finite Dimensional Linear Systems; *Wiley* (New York, NY) *1970*
von Alven, William H.; A challenge (Edtl.); *T-SMC 71 Jul* 193 (1B03)

W

Warfield, John N., *see* Ferrell, William R.; *T-SMC 71 Jan* 1 (1B03)
Warfield, John N.; Editorial; *T-SMC 71 Oct* 305-306 (1B03)
Watanabe, Satosi; A survey of clustering algorithms (Abstr.); *T-SMC 71 Oct* 398-399 (2D12)
Watanabe, Satosi, *see* Kaminuma, Tsuguchika; *T-SMC 71 Oct* 403 (2E05)
Watson, James W., *see* Hardy, Lyndon M.; *T-SMC 71 Oct* 389-391 (2D03)
Weihrer, A. L., and Cesear A. Caceres; Using a small computer to analyze medical signals (Abstr.); *T-SMC 71 Oct* 401 (2E03)
Welch, John R., and Kenneth G. Salter; A context algorithm for pattern recognition and image interpretation; *T-SMC 71 Jan* 24-30 (1D02)
Willems, J. L.; Stability Theory of Dynamical Systems; *Wiley & Sons* (New York, NY) *1970. Review by* Pandit, Madhukar; *T-SMC 71 Oct* 408 (2E10)
Wilmot, Richard D., *see* Bussard, David L.; *T-SSC 70 Apr* 81-91 (1B07)
Wismer, David A., *see* Haimes, Yacov Y.; *T-SMC 71 Jul* 296-297 (2E10)
Womack, Baxter F., *see* Patterson, J. D.; *T-SSC 66 Aug* 62-67
Womack, Baxter F., *see* Oda, Moriya; *T-SMC 71 Apr* 171-175 (2B10)
Wong, Andrew K. C.; Complex information processing in planning health care systems (Abstr.); *T-SMC 71 Oct* 401 (2E03)

Y

Young, Dennis R.; Choosing among alternative complex systems when input characteristics are uncertain; *T-SMC 71 Jan* 77-82 (2C11)
Young, Tzay Y.; A minimax approach to dimensionality reduction and classification (Abstr.); *T-SMC 71 Oct* 401 (2E03)

SUBJECT INDEX

A

Adaptive control; *cf.* Self-organizing control
Adaptive estimation; discrete recursive filtering; sequential algorithms for maximum-likelihood bias estimation. *Lin, Jin L., T-SMC 71 Oct* 314-324 (1B12)
Adaptive estimation; linear estimation in quasi-stationary environment. *Monsen, Peter, T-SMC 71 Jul* 216-222 (1D02)
Adaptive estimation; pattern classification; fast-converging adaptive algorithms for separating linear classifier. *Kaminuma, Tsuguchika, T-SMC 71 Oct* 403 (2E05)
Adaptive systems; feature selection using logical networks; adaptive altering of weights in logical networks. *Riseman, Edward M., T-SMC 71 Jan* 43-55 (1E09)
Adaptive systems; human controller in visual–manual compensatory tracking task; two-dimensional adaptive model. *Gilstad, Dennis W., T-SMC 71 Jul* 261-266 (2B11)
Adaptive systems; pattern classification procedure; simulation. *Patterson, J. D., T-SSC 66 Aug* 62-67
Adaptive systems; stochastic transition matrix description; training algorithm. *Glorioso, Robert M., T-SMC 71 Jan* 86-87 (2D08)
Aerial photography; detection of changes in urban development; computer-aided detection. *Kawamura, Joseph G., T-SMC 71 Jul* 230-239 (1E04)
Aerial photography; target recognition system using contextual information; algorithm. *Welch, John R., T-SMC 71 Jan* 24-30 (1D02)
Agriculture; development in Nigeria; computer simulation. *Manetsch, Thomas J., T-SMC 71 Jan* 31-43 (1D09)
Air pollution control; San Francisco Bay Area; pollution-level constraints and transportation options within given constraints. *Burton, Robert W., T-SMC 71 Oct* 307-313 (1B05)
Air-traffic control; automatic radar target detection system with narrow-bandwidth data link; queuing requirements. *Bussard, David L., T-SSC 70 Apr* 81-91 (1B07)
Approximation techniques; Bayes', decision-directed, maximum-likelihood and stochastic approximation techniques; relationships. *Patrick, Edward A., T-SMC 71 Oct* 404 (2E06)
Approximation techniques; *cf.* Stochastic approximation
Automatic laboratory testing; pattern recognition in clinical medicine. *Ledley, Robert S., T-SMC 71 Oct* 400 (2E02)

B

Bayesian techniques; choosing among alternative systems when input characteristics are uncertain. *Young, Dennis R., T-SMC 71 Jan* 77-82 (2C11)
Bayesian techniques; probability distribution function generation from data; Bayes empirical distribution function. *Cunningham, David R., T-SMC 71 Jan* 19-23 (1C09)
Bayesian techniques; relationship to decision-directed, maximum-likelihood, and stochastic approximation techniques. *Patrick, Edward A., T-SMC 71 Oct* 404 (2E06)
Bayesian techniques; unsupervised estimation; asymptotic Bayesian techniques. *Costello, Joseph P., T-SMC 71 Oct* 404 (2E06)
Behavioral science; *cf.* Human behavior
Bibliographies; clustering techniques. *Haralick, Robert M., T-SMC 71 Jul* 275-289 (2D01)
Bibliographies; computer simulation models of human behavior. *Dutton, John M., T-SMC 71 Apr* 128-171 (1D02)
Biocontrol; human motor system; gain control of stretch reflex loop. *Gottlieb, Gerald L., T-SMC 71 Oct* 379-383 (2C05)
Biocontrol; *cf.* Eye tracking movements; Postural control systems
Biological organs; *cf.* Eyes
Biological tissues; *cf.* Muscles; Photoreceptor neurons
Biomedical instrumentation; image processors; computer-controlled microscope. *Lipkin, Lewis, T-SMC 71 Oct* 397 (2D11)
Biosignals; *cf.* Computer-aided signal analysis; Computer-aided signal processing

Books; automatic control; history up to 1800 (Review, *T-SMC 71 Oct* 407). *Mayr, O.*, MIT (Cambridge, MA) 1971
Books; control system synthesis (Review, *T-SMC 71 Apr* 191). *Porter, Brian*, Barnes and Noble (New York, NY) 1969
Books; decision analysis in engineering design (Review, *T-SMC 71 Jan* 95). *Tribus, Myron*, Pergamon (New York, NY) 1969
Books; diakoptics; contour theory of networks (Review, *T-SMC 71 Oct* 405-406). *Happ, Harvey H.*, Academic Press (New York, NY) 1971
Books; digital signal processing and digital filters (Review, *T-SMC 71 Jan* 95-96). *Gold, Bernard*, McGraw-Hill (New York, NY) 1969
Books; estimation theory with applications to communications and control (Review, *T-SMC 71 Oct* 405). *Sage, Andrew P.*, McGraw-Hill (New York, NY) 1971
Books; finite dimensional linear systems (Review, *T-SMC 71 Jan* 96-97). *Brockett, Roger W.*, Wiley (New York, NY) 1970
Books; functional analysis (Review, *T-SMC 71 Jan* 94-95). *Epstein, Bernard*, Saunders (Philadelphia, PA) 1970
Books; linear lumped systems analysis (Review, *T-SMC 71 Jan* 94). *Martens, H. R.*, Merrill (Columbus, OH) 1969
Books; management games; simulated decision making (Review, *T-SMC 71 Jan* 97). *McFarlan, F. Warren*, Macmillan (New York, NY) 1970
Books; mathematical programming (Review, *T-SMC 71 Jul* 301). *McMillan, Claude, Jr.*, Wiley (New York, NY) 1970
Books; nonlinear system theory; functional analysis approach (Review, *T-SMC 71 Jul* 302). *Holtzman, Jack M.*, Prentice-Hall (Englewood Cliffs, NJ) 1970
Books; optimal control (Review, *T-SMC 71 Jan* 98-99). *Bryson, A. E.*, Blaisdell (Waltham, MA) 1969
Books; optimization techniques for large-scale systems (Review, *T-SMC 71 Jul* 300-301). *Lasdon, Leon S.*, Macmillan (New York, NY) 1970
Books; optimization theory and applications (Review, *T-SMC 71 Jan* 98-99). *Pierre, D. A.*, Wiley (New York, NY) 1969
Books; orthogonal functions for information transmission (Review, *T-SMC 71 Apr* 188). *Harmuth, H. F.*, Springer (New York, NY) 1970
Books; power system operation (Review, *T-SMC 71 Oct* 407-408). *Miller, R. H.*, McGraw-Hill (New York, NY) 1970
Books; power system reliability evaluation (Review, *T-SMC 71 Oct* 406-407). *Billinton, Roy*, Gordon and Breach (New York, NY) 1970
Books; power systems; nodal analysis (Review, *T-SMC 71 Jul* 300). *Dimo, Paul*, Editura Academiei Republica Socialiste Romania (Bucharest, Romania) 1968
Books; sampled-data systems; statistical analysis (Review, *T-SMC 71 Apr* 189-190). *Krutko, P. D.*, Elsevier (New York, NY) 1969
Books; stability of dynamical systems (Review, *T-SMC 71 Oct* 408). *Willems, J. L.*, Wiley & Sons (New York, NY) 1970
Books; stability theory and applications (Review, *T-SMC 71 Oct* 408). *Leipholz, H.*, Academic Press (New York, NY) 1970
Books; state increment dynamic programming (Review, *T-SMC 71 Jan* 97-98). *Larson, Robert E.*, Elsevier (New York, NY) 1968
Books; statistics; theory and applications (Review, *T-SMC 71 Apr* 188-189). *Chao, Lincoln L.*, McGraw-Hill (New York, NY) 1969
Books; system analysis; analysis and case examples (Review, *T-SMC 71 Jul* 298-299). *Rudwick, B. H.*, Wiley (New York, NY) 1969
Britain; *cf.* Great Britain

C

Character recognition; handwritten numerals; edge-defining preprocessor. *Quarmby, David J., T-SMC 71 Oct* 331-338 (1D05)
Character recognition; multiple-view binary pattern reconstruction from projections. *Chang, S. K., T-SMC 71 Jan* 90-94 (2D12)
Clinical laboratory testing; *cf.* Automatic laboratory testing
Clustering techniques; *cf.* Pattern classification
Coding techniques; *cf.* Huffman coding
Communication theory; orthogonal functions for information transmission; book (Review, *T-SMC 71 Apr* 188). *Harmuth, H. F.*, Springer (New York, NY) 1970
Computer-aided image processing; change discrimination in aerial photographs; computer-aided detection of changes in urban development. *Kawamura, Joseph G., T-SMC 71 Jul* 230-239 (1E04)
Computer-aided instrumentation; computer-controlled microscope; biological image processing. *Lipkin, Lewis, T-SMC 71 Oct* 397 (2D11)
Computer-aided instrumentation; *cf.* Automatic laboratory testing
Computer-aided medical diagnosis; Huffman coding for sequential diagnosis; dimensionality reduction. *Hardy, Lyndon M., T-SMC 71 Oct* 389-391 (2D03)
Computer-aided medical diagnosis; use of small computer for medical signal analysis. *Weihrer, A. L., T-SMC 71 Oct* 401 (2E03)
Computer-aided medical diagnosis; *cf.* Automatic laboratory testing
Computer-aided planning; health-care systems; simulation model for regional facilities. *Wong, Andrew K. C., T-SMC 71 Oct* 401 (2E03)
Computer-aided resource allocation; garbage collection; nonlinear programming model for manpower allocation. *Altman, Stanley M., T-SMC 71 Jul* 289-291 (2E03)
Computer-aided signal analysis; medical signals; use of small computer. *Weihrer, A. L., T-SMC 71 Oct* 401 (2E03)
Computer-aided signal processing; biosignals; computer system considerations. *Calvert, Thomas W., T-SMC 71 Oct* 400 (2E02)
Computer control; teleoperators; adaptive aiding using autonomous control subsystem with learning capability. *Freedy, Amos, T-SMC 71 Oct* 356-363 (1F06)
Computer graphics; *cf.* Interactive graphic systems
Computer simulation; human behavior; simulation models; bibliography. *Dutton, John M., T-SMC 71 Apr* 128-171 (1D02)
Computer simulation; *cf.* Digital computer simulation
Computer systems; *cf.* Time-shared computer systems
Conferences; *cf.* Systems Science and Cybernetics Conference
Control; *cf.* Adaptive control; Biocontrol; Optimal control; Predictive control; Self-organizing control
Control systems; history of automatic control up to 1800; book (Review, *T-SMC 71 Oct* 407). *Mayr, O.*, MIT (Cambridge, MA) 1971
Control system synthesis; book (Review, *T-SMC 71 Apr* 191). *Porter, Brian*, Barnes and Noble (New York, NY) 1969
Crayfish; information rate and capacity of photoreceptor nerve channel. *Harris, Dale A., T-SMC 71 Jan* 67-77 (2C01)
Cybernetics; application to economic systems; macroeconomic model building and analysis. *Runyan, Harry M., T-SMC 71 Jan* 8-18 (1B10)

D

Data acquisition; *cf.* Satellite data acquisition systems
Data processing; iterative clustering procedures; application to remote sensing data. *Haralick, Robert M., T-SMC 71 Jul* 275-289 (2D01)
Decision analysis; application to engineering design; book (Review, *T-SMC 71 Jan* 95). *Tribus, Myron*, Pergamon (New York, NY) 1969
Decision-directed estimation; relationship to Bayes', maximum-likelihood, and stochastic approximation techniques. *Patrick, Edward A., T-SMC 71 Oct* 404 (2E06)
Decision-making; choosing among alternative systems when input characteristics are uncertain; Bayesian techniques. *Young, Dennis R., T-SMC 71 Jan* 77-82 (2C11)
Decision making; management games; simulated decision making; book (Review, *T-SMC 71 Jan* 97). *McFarlan, F. Warren*, Macmillan (New York, NY) 1970
Decision procedures; adaptive pattern classification system. *Patterson, J. D., T-SSC 66 Aug* 62-67
Decision procedures; palm reading from viewpoints of pattern recognition, heuristics, and learning. *Oda, Moriya, T-SMC 71 Apr* 171-175 (2B10)
Decision procedures; word recognition in unsegmented sentences; variable length vector pattern recognition. *Harley, Thomas J., Jr., T-SMC 71 Oct* 391-394 (2D05)
Decision theory; Markov decision processes on partitioned state space; optimal control of stochastic systems. *Smith, John L., T-SMC 71 Jan* 55-60 (2B01)
Decision theory; probability distribution function generation from data; Bayes empirical distribution function. *Cunningham, David R., T-SMC 71 Jan* 19-23 (1C09)
Design methodology; decision analysis in engineering design; book (Review, *T-SMC 71 Jan* 95). *Tribus, Myron*, Pergamon (New York, NY) 1969
Diagnostic testing; computer-aided sequential diagnosis using Huffman coding. *Hardy, Lyndon M., T-SMC 71 Oct* 389-391 (2D03)
Diakoptics; contour theory of networks; book (Review, *T-SMC 71 Oct* 405-406). *Happ, Harvey H.*, Academic Press (New York, NY) 1971
Differential equations; finite dimensional linear systems; book (Review, *T-SMC 71 Jan* 96-97). *Brockett, Roger W.*, Wiley (New York, NY) 1970
Digital computer simulation; agricultural development in Nigeria. *Manetsch, Thomas J., T-SMC 71 Jan* 31-43 (1D09)
Digital computer simulation; muscle spindle model. *Gottlieb, Gerald L., T-SSC 70 Apr* 127-132 (1F05)
Digital computer systems; *cf.* Time-shared computer systems
Digital filters; book (Review, *T-SMC 71 Jan* 95-96). *Gold, Bernard*, McGraw-Hill (New York, NY) 1969
Digital image processing; concavity extraction by parallel processing. *Arcelli, C., T-SMC 71 Oct* 394-396 (2D08)
Digital signal processing; book (Review, *T-SMC 71 Jan* 95-96). *Gold, Bernard*, McGraw-Hill (New York, NY) 1969
Distributed systems; performance-adaptive self-organizing control; Kiefer-Wolfowitz stochastic approximation algorithm. *Badavas, Paul C., T-SMC 71 Apr* 105-110 (1B03)
Distribution functions; *cf.* Probability distribution functions
Dynamic programming; application to feature selection. *Nelson, G. D., T-SSC 68 Jul* 145-150
Dynamic programming; state increment method; book (Review, *T-SMC 71 Jan* 97-98). *Larson, Robert E.*, Elsevier (New York, NY) 1968

E

Earth Resources Technology Satellites; data-acquisition systems and image processing. *Nagy, George, T-SMC 71 Oct* 397 (2D11)
Economic systems; agricultural development in Nigeria; computer simulation. *Manetsch, Thomas J., T-SMC 71 Jan* 31-43 (1D09)
Economic systems; macroeconomic model building and analysis; cybernetics approach. *Runyan, Harry M., T-SMC 71 Jan* 8-18 (1B10)
Economic systems; polynomial description of British economy. *Ivakhnenko, A. G., T-SMC 71 Oct* 364-378 (2B02)
Error probability; *M*-ary pattern recognition; upper and lower bounds. *Lainiotis, Demetrios G., T-SMC 71 Apr* 175-178 (2C02)
Estimation; Bayes', decision-directed, maximum-likelihood, and stochastic approximation techniques; relationships. *Patrick, Edward A., T-SMC 71 Oct* 404 (2E06)
Estimation; pattern recognition; discriminant function learning and density estimation. *Schwartz, Stuart, T-SMC 71 Oct* 403 (2E05)
Estimation; theory and applications to communications and control; book (Review, *T-SMC 71 Oct* 405). *Sage, Andrew P.*, McGraw-Hill (New York, NY) 1971
Estimation; *cf.* Adaptive estimation; Kalman filters; Linear estimation; Maximum-likelihood estimation; Unsupervised estimation
Eye movement; head rotation-induced eye movement; mathematical model. *Sugie, Noboru, T-SMC 71 Jul* 251-260 (2B01)
Eyes; pupillary system in cats with light and electrical stimulation; static and dynamic characteristics. *Terdiman, Joseph, T-SMC 71 Jul* 239-251 (1F01)
Eye tracking movements; predictive control model; tracking of periodic square waves; saccadic latency. *Sugie, Noboru, T-SMC 71 Jan* 2-7 (1B04)

F

Feature extraction; concavity set of binary images; extraction by parallel processing. *Arcelli, C., T-SMC 71 Oct* 394-396 (2D08)
Feature extraction; handwritten numerals; edge-defining preprocessor. *Quarmby, David J., T-SMC 71 Oct* 331-338 (1D05)
Feature selection; adaptive altering of weights in logical networks. *Riseman, Edward M., T-SMC 71 Jan* 43-55 (1E09)
Feature selection; criteria based on error probability bounds for *M*-ary pattern recognition. *Lainiotis, Demetrios G., T-SMC 71 Apr* 175-178 (2C02)
Feature selection; dynamic programming approach. *Nelson, G. D., T-SSC 68 Jul* 145-150

Feature selection; multihypothesis discrimination measures; expected divergence. *Toussaint, Godfried T., T-SMC 71 Oct* 384-385 (2C10)
Feedback control; history up to 1800; book (Review, *T-SMC 71 Oct* 407). *Mayr, O.*, MIT (Cambridge, MA) 1971
Filtering; *cf.* Estimation
Filters; *cf.* Digital filters; Kalman filters; Weiner filters
Functional analysis; application to nonlinear system theory; book (Review, *T-SMC 71 Jul* 302). *Holtzman, Jack M.*, Prentice-Hall (Englewood Cliffs, NJ) 1970
Functional analysis; introductory textbook (Review, *T-SMC 71 Jan* 94-95). *Epstein, Bernard*, Saunders (Philadelphia, PA) 1970
Fuzzy relations; use for pattern classification. *Tamura, Shinichi, T-SMC 71 Jan* 61-66 (2B07)

G

Game theory; management games; simulated decision making; book (Review, *T-SMC 71 Jan* 97). *McFarlan, F. Warren*, Macmillan (New York, NY) 1970
Garbage collection; nonlinear programming model for manpower allocation. *Altman, Stanley M., T-SMC 71 Jul* 289-291 (2E03)
Gradient matrices; operational properties; generalizations and extensions. *Vetter, William J., T-SMC 71 Apr* 184-186 (2C11)
Graphic interactive systems; *cf.* Interactive graphic systems
Great Britain; economic system; polynomial description. *Ivakhnenko, A. G., T-SMC 71 Oct* 364-378 (2B02)

H

Hadamard transforms; *cf.* Walsh-Hadamard transforms
Harmonic analysis; Walsh-Hadamard transforms of probability functions of discrete random variables. *Pearl, Judea, T-SMC 71 Apr* 111-119 (1B09)
Health-care systems; planning; simulation model for regional facilities. *Wong, Andrew K. C., T-SMC 71 Oct* 401 (2E03)
Histories; automatic control up to 1800; book (Review, *T-SMC 71 Oct* 407). *Mayr, O.*, MIT (Cambridge, MA) 1971
Huffman coding; application to computer-aided sequential diagnosis. *Hardy, Lyndon M., T-SMC 71 Oct* 389-391 (2D03)
Human behavior; computer simulation models; bibliography. *Dutton, John M., T-SMC 71 Apr* 128-171 (1D02)
Human controllers; visual–manual compensatory tracking task; two-dimensional adaptive model using pattern recognition techniques. *Gilstad, Dennis W., T-SMC 71 Jul* 261-266 (2B11)
Human controllers; *cf.* Teleoperators
Human factors; pushbutton-switch operating forces. *Bergenthal, James, T-SMC 71 Oct* 385-387 (2C11)
Human motor system; control and regulation; gain control of stretch reflex loop. *Gottlieb, Gerald L., T-SMC 71 Oct* 379-383 (2C05)
Human motor system; *cf.* Postural control systems
Human operators; *cf.* Human controllers
Hypothesis testing; expected divergence for multihypothesis case; lower bounds in terms of two-hypothesis discrimination measures. *Toussaint, Godfried T., T-SMC 71 Oct* 384-385 (2C10)

I

Identification; *cf.* System identification
IEEE G-SMC; application of systems disciplines to social problems; editorial. *von Alven, William H., T-SMC 71 Jul* 193 (1B03)
IEEE G-SMC; editorial policies. *Ferrell, William R., T-SMC 71 Jan* 1 (1B03)
IEEE G-SMC; editorial policies. *Warfield, John N., T-SMC 71 Oct* 305-306 (1B03)
Image processing; biological images; computer-controlled microscope. *Lipkin, Lewis, T-SMC 71 Oct* 397 (2D11)
Image processing; Earth Resources Technology Satellite data. *Nagy, George, T-SMC 71 Oct* 397 (2D11)
Image processing; introduction to session at 1970 pattern recognition workshop. *Rosenfeld, Azriel, T-SMC 71 Oct* 397 (2D11)
Image processing; iterative clustering procedure; application to remote sensing data. *Haralick, Robert M., T-SMC 71 Jul* 275-289 (2D01)
Image processing; parallel pattern processing; implementation using photosensitive array and parallel logic. *Levialdi, Stefano, T-SMC 71 Jul* 292-296 (2E06)
Image processing; picture description structures; labeled graphs. *Pfaltz, John L., T-SMC 71 Oct* 397-398 (2D11)
Image processing; *cf.* Computer-aided image processing; Digital image processing
Information rates; crayfish photoreceptor nerve channel. *Harris, Dale A., T-SMC 71 Jan* 67-77 (2C01)
Integrated circuits; *cf.* LSI
Interactive graphic systems; pattern clustering using computer-driven display. *Butler, George A., T-SMC 71 Oct* 398 (2D12)
Interactive systems; pattern analysis and recognition. *Sammon, John W., Jr., T-SMC 71 Oct* 400-401 (2E02)
Interconnected networks; partitioning for LSI implementation; algorithm. *Bracchi, Giampio, T-SMC 71 Oct* 325-330 (1C11)
Invariant embedding; application to maximum-likelihood bias estimation for discrete recursive filtering. *Lin, Jin L., T-SMC 71 Oct* 314-324 (1B12)

K

Kalman filters; derivation assuming only covariances required to construct Wiener filter are known; independence of models of processes generating covariances. *Anderson, Brian D. O., T-SMC 71 Apr* 119-128 (1C05)

L

Large-scale integration; *cf.* LSI
Large-scale systems; input characteristics uncertain; choosing among alternative systems. *Young, Dennis R., T-SMC 71 Jan* 77-82 (2C11)
Large-scale systems; optimization techniques; book (Review, *T-SMC 71 Jul* 300-301). *Lasdon, Leon S.*, Macmillan (New York, NY) 1970
Large-scale systems; *cf.* Economic systems
Learning; probability distribution function generation from data; Bayes empirical distribution function. *Cunningham, David R., T-SMC 71 Jan* 19-23 (1C09)
Learning; *cf.* Supervised learning; Unsupervised learning
Learning procedures; pattern recognition; discriminant function learning and density estimation. *Schwartz, Stuart, T-SMC 71 Oct* 403 (2E05)
Learning procedures; visual pattern perception. *Noton, David, T-SSC 70 Oct* 349-357 (2D11)
Learning systems; teleoperators; adaptive aiding using autonomous control subsystem with learning capability; computer-based system. *Freedy, Amos, T-SMC 71 Oct* 356-363 (1F06)
Learning systems; *cf.* Stochastic learning systems
Linear estimation; quasi-stationary environment; mean-square-error performance. *Monsen, Peter, T-SMC 71 Jul* 216-222 (1D02)
Linear programming; separating hyperplanes. *Martin, W. C., T-SMC 71 Jan* 87-88 (2D09)
Linear systems; analysis; book (Review, *T-SMC 71 Jan* 94). *Martens, H. R.*, Merrill (Columbus, OH) 1969
Linear systems; finite dimensional systems; book (Review, *T-SMC 71 Jan* 96-97). *Brockett, Roger W.*, Wiley (New York, NY) 1970
Linear systems; synthesis; book (Review, *T-SMC 71 Apr* 191). *Porter, Brian*, Barnes and Noble (New York, NY) 1969
Logic circuits; application to feature selection; adaptive altering of weights in logical networks. *Riseman, Edward M., T-SMC 71 Jan* 43-55 (1E09)
LSI; partitioning systems for LSI implementation; algorithm. *Bracchi, Giampio, T-SMC 71 Oct* 325-330 (1C11)

M

Man–machine systems; time-shared computer systems; user-oriented evaluation. *Jutila, Sakari T., T-SMC 71 Oct* 344-349 (1E06)
Management science; simulated decision making; book (Review, *T-SMC 71 Jan* 97). *McFarlan, F. Warren*, Macmillan (New York, NY) 1970
Markov processes; decision processes for optimal control of stochastic systems; state-space reduction. *Smith, John L., T-SMC 71 Jan* 55-60 (2B01)
Mathematical programming; introductory book (Review, *T-SMC 71 Jul* 301). *McMillan, Claude, Jr.*, Wiley (New York, NY) 1970
Mathematical programming; *cf.* Dynamic programming; Linear programming; Nonlinear programming
Matrix algebra; *cf.* Gradient matrices
Matrix inversion; iterative method for generalized inverse and rank computation. *Gupta, Naresh N., T-SMC 71 Jan* 89-90 (2D11)
Maximum-likelihood estimation; discrete recursive filtering; sequential algorithms for maximum-likelihood bias estimation. *Lin, Jin L., T-SMC 71 Oct* 314-324 (1B12)
Maximum-likelihood estimation; relationship to Bayes', decision-directed, and stochastic approximation techniques. *Patrick, Edward A., T-SMC 71 Oct* 404 (2E06)
Medical diagnosis; *cf.* Computer-aided medical diagnosis
Memories; *cf.* Semiconductor memories
Minkowski metric; use in pattern classification. *Toussaint, Godfried T., T-SSC 70 Oct* 360-362 (2E10)
Monte Carlo simulation; automatic radar target detection system with narrow-bandwidth data link. *Bussard, David L., T-SSC 70 Apr* 81-91 (1B07)
Multimode oscillators; tunnel-diode arrays; information storage capacity. *Scott, Alwyn C., T-SMC 71 Jul* 267-275 (2C05)
Muscles; muscle spindle model; digital computer simulation. *Gottlieb, Gerald L., T-SSC 70 Apr* 127-132 (1F05)

N

Network theory; diakoptics; contour theory of networks; book (Review, *T-SMC 71 Oct* 405-406). *Happ, Harvey H.*, Academic Press (New York, NY) 1971
Neurons; *cf.* Photoreceptor neurons
Neurophysiology; *cf.* Photoreceptor neurons
Nigeria; agricultural development; computer simulation. *Manetsch, Thomas J., T-SMC 71 Jan* 31-43 (1D09)
Nonlinear programming; application to manpower allocation for garbage collection. *Altman, Stanley M., T-SMC 71 Jul* 289-291 (2E03)
Nonlinear systems; functional analysis approach; book (Review, *T-SMC 71 Jul* 302). *Holtzman, Jack M.*, Prentice-Hall (Englewood Cliffs, NJ) 1970
Nonstationary processes; linear estimation in quasi-stationary environment. *Monsen, Peter, T-SMC 71 Jul* 216-222 (1D02)
Numerical methods; *cf.* Matrix inversion

O

Optical data processing; *cf.* Image processing
Optimal control; book (Review, *T-SMC 71 Jan* 98-99). *Bryson, A. E.*, Blaisdell (Waltham, MA) 1969
Optimal control; distributed systems; performance-adaptive self-organizing control; Kiefer-Wolfowitz stochastic approximation algorithm. *Badavas, Paul C., T-SMC 71 Apr* 105-110 (1B03)
Optimal control; stochastic systems; Markov decisions on partitioned state space. *Smith, John L., T-SMC 71 Jan* 55-60 (2B01)
Optimization techniques; application to freight railroad systems; user-oriented operating policy. *Thomet, Michel A., T-SMC 71 Oct* 349-356 (1E11)
Optimization techniques; application to maximum-likelihood bias estimation for discrete recursive filtering. *Lin, Jin L., T-SMC 71 Oct* 314-324 (1B12)
Optimization techniques; large-scale systems; book (Review, *T-SMC 71 Jul* 300-301). *Lasdon, Leon S.*, Macmillan (New York, NY) 1970
Optimization techniques; simultaneous system identification and optimization; bicriterion formulation. *Haimes, Yacov Y., T-SMC 71 Jul* 296-297 (2E10)
Optimization techniques; theory and application; book (Review, *T-SMC 71 Jan* 98-99). *Pierre, D. A.*, Wiley (New York, NY) 1969
Optimization techniques; *cf.* Mathematical programming; Search methods
Orthogonal functions; application to information transmission; book (Review, *T-SMC 71 Apr* 188). *Harmuth, H. F.*, Springer (New York, NY) 1970
Oscillators; *cf.* Multimode oscillators; Tunnel-diode oscillators

P

Palm reading; decision mechanism study from viewpoints of pattern recognition,

heuristics, and learning. *Oda, Moriya, T-SMC 71 Apr* 171-175 (2B10)
Pattern classification; adaptive algorithms for separating linear classifier. *Kaminuma, Tsuguchika, T-SMC 71 Oct* 403 (2E05)
Pattern classification; adaptive system; simulation. *Patterson, J. D., T-SSC 66 Aug* 62-67
Pattern classification; clustering algorithms. *Watanabe, Satosi, T-SMC 71 Oct* 398-399 (2D12)
Pattern classification; clustering techniques; nonsupervised learning and dual-mode estimation. *Cooper, David B., T-SMC 71 Oct* 398 (2D12)
Pattern classification; clustering techniques; summary of recent work. *Gitman, Israel, T-SMC 71 Oct* 399 (2E01)
Pattern classification; clustering techniques; summary of recent work. *Haralick, Robert M., T-SMC 71 Oct* 399-400 (2E01)
Pattern classification; clustering using computer-driven display. *Butler, George A., T-SMC 71 Oct* 398 (2D12)
Pattern classification; dimensionality reduction; minimax approach. *Young, Tzay Y., T-SMC 71 Oct* 401 (2E03)
Pattern classification; dimensionality reduction; optimal coordinate representations. *Kulikowski, Casimir A., T-SMC 71 Oct* 401-402 (2E03)
Pattern classification; dimensionality reduction; indirect methods. *Meisel, William S., T-SMC 71 Oct* 402 (2E04)
Pattern classification; dimensionality reduction; computational complexity aspects. *Cover, Thomas M., T-SMC 71 Oct* 402 (2E04)
Pattern classification; dimensionality reduction; structure dependence. *Kanal, Laveen N., T-SMC 71 Oct* 402-403 (2E04)
Pattern classification; discriminant function estimation and density estimation. *Schwartz, Stuart, T-SMC 71 Oct* 403 (2E05)
Pattern classification; fuzzy relations; subjective similarity measure. *Tamura, Shinichi, T-SMC 71 Jan* 61-66 (2B07)
Pattern classification; iterative clustering procedure; application to remote sensing data. *Haralick, Robert M., T-SMC 71 Jul* 275-289 (2D01)
Pattern classification; Minkowski metric classifier. *Toussaint, Godfried T., T-SSC 70 Oct* 360-362 (2E10)
Pattern classification; problem-dependent clustering. *Patrick, Edward A., T-SMC 71 Oct* 399 (2E01)
Pattern classification; recursive discriminant functions and unsupervised estimation. *Agrawala, Ashok K., T-SMC 71 Oct* 403-404 (2E05)
Pattern classification; separating hyperplanes; linear programming algorithm. *Martin, W. C., T-SMC 71 Jan* 87-88 (2D09)
Pattern classification; unsupervised estimation; asymptotic Bayesian techniques. *Costello, Joseph P., T-SMC 71 Oct* 404 (2E06)
Pattern recognition; application to biomedical signal processing; interactive pattern analysis and recognition. *Sammon, John W., Jr., T-SMC 71 Oct* 400-401 (2E02)
Pattern recognition; application to modeling of human controllers; two-dimensional adaptive model. *Gilstad, Dennis W., T-SMC 71 Jul* 261-266 (2B11)
Pattern recognition; application to palm reading. *Oda, Moriya, T-SMC 71 Apr* 171-175 (2B10)
Pattern recognition; change discrimination in aerial photographs; computer-aided detection of changes in urban development. *Kawamura, Joseph G., T-SMC 71 Jul* 230-239 (1E04)
Pattern recognition; clinical medicine; automatic laboratory testing. *Ledley, Robert S., T-SMC 71 Oct* 400 (2E02)
Pattern recognition; complex-valued nonlinear discriminant function for many-valued patterns. *Uesaka, Yoshinori, T-SMC 71 Jul* 194-215 (1B04)
Pattern recognition; error probability bounds for *M*-ary pattern recognition. *Lainiotis, Demetrios G., T-SMC 71 Apr* 175-178 (2C02)
Pattern recognition; learning with imperfect teacher; error-correcting procedure based on nonparametric learning scheme. *Shanmugam, K., T-SMC 71 Jul* 223-229 (1D09)
Pattern recognition; linguistic approach. *Evans, Thomas G., T-SMC 71 Oct* 398 (2D12)
Pattern recognition; machine discrimination between two pattern classes. *Padden, James T., T-SMC 71 Apr* 178-182 (2C05)
Pattern recognition; parallel processing; implementation using photosensitive array and parallel logic. *Levialdi, Stefano, T-SMC 71 Jul* 292-296 (2E06)
Pattern recognition; variable length vector pattern recognition; word recognition in unsegmented sentences. *Harley, Thomas J., Jr., T-SMC 71 Oct* 391-394 (2D05)
Pattern recognition; visual pattern perception; learning and recognition. *Noton, David, T-SSC 70 Oct* 349-357 (2D11)
Pattern recognition; workshop at 1970 Systems Science and Cybernetics Conference; abstracts of papers. *IEEE G-SMC, T-SMC 71 Oct*
Pattern recognition; workshop at 1970 Systems Science and Cybernetics Conference; introduction. *Patrick, Edward A., T-SMC 71 Oct* 397 (2D11)
Pattern recognition; *cf.* Character recognition; Feature extraction; Feature selection; Image processing; Pattern classification; Target recognition; Word recognition
Pattern reconstruction; multiple-view binary pattern reconstruction from projections. *Chang, S. K., T-SMC 71 Jan* 90-94 (2D12)
Photography; *cf.* Aerial photography
Photoreceptor neurons; crayfish; information rate and capacity. *Harris, Dale A., T-SMC 71 Jan* 67-77 (2C01)
Picture processing; *cf.* Image processing
Planning; *cf.* Computer-aided planning; System planning
Pollution; *cf.* Air pollution
Polynomials; system models using polynomial theory. *Ivakhnenko, A. G., T-SMC 71 Oct* 364-378 (2B02)
Postural control systems; muscle spindle model; digital computer simulation. *Gottlieb, Gerald L., T-SSC 70 Apr* 127-132 (1F05)
Postural control systems; *cf.* Human motor system
Power system operation; introductory textbook (Review, *T-SMC 71 Oct* 407-408). *Miller, R. H.*, McGraw-Hill (New York, NY) 1970
Power system reliability; computation of reliability indices; book (Review, *T-SMC 71 Oct* 406-407). *Billinton, Roy*, Gordon and Breach (New York, NY) 1970
Power systems; nodal analysis; book (Review, *T-SMC 71 Jul* 300). *Dimo, Paul*, Editura Academiei Republica Socialiste Romania (Bucharest, Romania) 1968
Predictive control; visual target tracking of periodic square waves; saccadic latency. *Sugie, Noboru, T-SMC 71 Jan* 2-7 (1B04)
Probability distribution functions; generation from data; Bayes empirical distribution function. *Cunningham, David R., T-SMC 71 Jan* 19-23 (1C09)
Probability distribution functions; Walsh-Hadamard transforms of functions of discrete random variables. *Pearl, Judea, T-SMC 71 Apr* 111-119 (1B09)
Programming; *cf.* Mathematical programming
Pushbutton switches; operating force characteristics; human factors. *Bergenthal, James, T-SMC 71 Oct* 385-387 (2C11)

Q

Queuing theory; automatic radar target detection system with narrow-bandwidth data link; queuing requirements. *Bussard, David L., T-SSC 70 Apr* 81-91 (1B07)

R

Radar detection; automatic radar target detection system with narrow-bandwidth data link; queuing requirements. *Bussard, David L., T-SSC 70 Apr* 81-91 (1B07)
Railroads; optimization of freight railroad systems; user-oriented operating policy. *Thomet, Michel A., T-SMC 71 Oct* 349-356 (1E11)
Random processes; *cf.* Stochastic processes
Random systems; *cf.* Stochastic systems
Reliability; *cf.* Power system reliability
Remote manipulators; *cf.* Teleoperators
Remote sensing; pattern clustering techniques. *Haralick, Robert M., T-SMC 71 Jul* 275-289 (2D01)
Resource allocation; *cf.* Computer-aided resource allocation

S

Sampled-data systems; statistical analysis; book (Review, *T-SMC 71 Apr* 189-190). *Krutko, P. D.*, Elsevier (New York, NY) 1969
San Francisco Bay Area; air pollution control; pollution-level constraints and transportation options within given constraints. *Burton, Robert W., T-SMC 71 Oct* 307-313 (1B05)
Satellite data acquisition systems; Earth Resources Technology Satellites; image processing. *Nagy, George, T-SMC 71 Oct* 397 (2D11)
Search methods; direct procedure with advantages over Powell's procedure. *Masters, Charles O., T-SMC Apr 182-184* (2C09)
Self-organizing control; conventional controller analysis. *Tilley, Elizabeth A., T-SMC 71 Jan* 84-85 (2D06)
Self-organizing control; performance-adaptive control of distributed systems; Kiefer-Wolfowitz stochastic approximation algorithm. *Badavas, Paul C., T-SMC 71 Apr* 105-110 (1B03)
Semiconductor memories; tunnel-diode arrays; multimode oscillator properties; information storage capacity. *Scott, Alwyn C., T-SMC 71 Jul* 267-275 (2C05)
Sequential estimation; discrete recursive filtering; sequential algorithms for maximum-likelihood bias estimation. *Lin, Jin L., T-SMC 71 Oct* 314-324 (1B12)
Signal analysis; *cf.* Computer-aided signal analysis
Signal design; multihypothesis discrimination measures; expected divergence. *Toussaint, Godfried T., T-SMC 71 Oct* 384-385 (2C10)
Signal processing; *cf.* Computer-aided signal processing; Digital signal processing
Simulation;; adaptive pattern classification procedure. *Patterson, J. D., T-SSC 66 Aug* 62-67
Simulation; health-care systems; simulation model for regional facilities. *Wong, Andrew K. C., T-SMC 71 Oct* 401 (2E03)
Simulation; management games; decision making; book (Review, *T-SMC 71 Jan* 97). *McFarlan, F. Warren*, Macmillan (New York, NY) 1970
Simulation; *cf.* Computer simulation; Digital computer simulation
Social problems; application of system engineering; editorial. *von Alven, William H., T-SMC 71 Jul* 193 (1B03)
Social systems; planning; choosing among alternative systems when input characteristics are uncertain. *Young, Dennis R., T-SMC 71 Jan* 77-82 (2C11)
Social systems; *cf.* Economic systems
Spectral analysis; *cf.* Harmonic analysis
Speech recognition; word recognition in unsegmented sentences; variable length vector pattern recognition. *Harley, Thomas J., Jr., T-SMC 71 Oct* 391-394 (2D05)
Stability; linear and nonlinear differential and difference equations; book (Review, *T-SMC 71 Oct* 408). *Willems, J. L.*, Wiley & Sons (New York, NY) 1970
Stability; theory and applications; book (Review, *T-SMC 71 Oct* 408). *Leipholz, H.*, Academic Press (New York, NY) 1970
Statistics; theory and applications; textbook (Review, *T-SMC 71 Apr* 188-189). *Chao, Lincoln L.*, McGraw-Hill (New York, NY) 1969
Stochastic approximation; Kiefer-Wolfowitz algorithm; application to performance-adaptive self-organizing control of distributed systems. *Badavas, Paul C., T-SMC 71 Apr* 105-110 (1B03)
Stochastic approximation; linear estimation in quasi-stationary environment. *Monsen, Peter, T-SMC 71 Jul* 216-222 (1D02)
Stochastic approximation; new algorithm with fast rate of convergence; converges to true value regardless of starting point. *Sinha, Naresh K., T-SMC 71 Oct* 338-344 (1D12)
Stochastic approximation; relationship to Bayes', decision-directed, and maximum-likelihood techniques. *Patrick, Edward A., T-SMC 71 Oct* 404 (2E06)
Stochastic learning systems; training algorithm for stochastic transition matrix descriptions. *Glorioso, Robert M., T-SMC 71 Jan* 86-87 (2D08)
Stochastic processes; probability distribution function generation from data; Bayes empirical distribution function. *Cunningham, David R., T-SMC 71 Jan* 19-23 (1C09)
Stochastic processes; *cf.* Markov processes; Nonstationary processes
Stochastic systems; optimal control; Markov decisions on partitioned state space. *Smith, John L., T-SMC 71 Jan* 55-60 (2B01)
Stochastic systems; sampled-data systems; statistical analysis; book (Review, *T-SMC 71 Apr* 189-190). *Krutko, P. D.*, Elsevier (New York, NY) 1969
Stochastic systems; Walsh-Hadamard transforms of probability functions of discrete random variables. *Pearl, Judea, T-SMC 71 Apr* 111-119 (1B09)
Supervised learning; imperfect teacher; error-correcting procedure based on

nonparametric learning scheme. *Shanmugam, K., T-SMC 71 Jul* 223-229 (1D09)
Supervised learning; pattern clustering; combining supervised and unsupervised learning. *Cooper, David B., T-SMC 71 Oct* 398 (2D12)
Switches; pushbutton-switch operating forces; human factors. *Bergenthal, James, T-SMC 71 Oct* 385-387 (2C11)
System analysis; analysis and case examples; book (Review, *T-SMC 71 Jul* 298-299). *Rudwick, B. H.*, Wiley (New York, NY) 1969
System engineering; application to social problems; edtorial. *von Alven, William H., T-SMC 71 Jul* 193 (1B03)
System identification; simultaneous identification and optimization; bicriterion formulation. *Haimes, Yacov Y., T-SMC 71 Jul* 296-297 (2E10)
System partitioning; partition generation for LSI implementation; algorithm. *Bracchi, Giampio, T-SMC 71 Oct* 325-330 (1C11)
System planning; choosing among alternative systems when input characteristics are uncertain; Bayesian techniques. *Young, Dennis R., T-SMC 71 Jan* 77-82 (2C11)
System reliability; *cf.* Power system reliability
Systems, Man, and Cybernetics Group; *cf.* IEEE G-SMC
Systems Science and Cybernetics Conference; pattern recognition workshop at 1970 conference; abstracts of papers. *IEEE G-SMC, T-SMC 71 Oct*
Systems Science and Cybernetics Conference; pattern recognition workshop at 1970 conference; introduction. *Patrick, Edward A., T-SMC 71 Oct* 397 (2D11)
System theory; linear lumped systems analysis; book (Review, *T-SMC 71 Jan* 94). *Martens, H. R.*, Merrill (Columbus, OH) 1969
System theory; polynomial theory of complex systems. *Ivakhnenko, A. G., T-SMC 71 Oct* 364-378 (2B02)

T

Target recognition; contextual information utilization; algorithm for aerial photography interpretation. *Welch, John R., T-SMC 71 Jan* 24-30 (1D02)
Teleoperators; adaptive aiding using autonomous control subsystem with learning capability; computer-based system. *Freedy, Amos, T-SMC 71 Oct* 356-363 (1F06)
Time-shared computer systems; user-oriented evaluation; users' learning rates and utility function. *Jutila, Sakari T., T-SMC 71 Oct* 344-349 (1E06)
Transforms; *cf.* Walsh-Hadamard transforms
Transportation; air pollution control in San Francisco Bay Area: pollution-level constraints and transportation options within given constraints. *Burton, Robert W., T-SMC 71 Oct* 307-313 (1B05)
Transportation; *cf.* Railroads
Tunnel-diode oscillators; two-dimensional diode arrays; multimode oscillator properties; information storage capacity. *Scott, Alwyn C., T-SMC 71 Jul* 267-275 (2C05)

U

Unsupervised estimation; asymptotic Bayesian techniques. *Costello, Joseph P., T-SMC 71 Oct* 404 (2E06)
Unsupervised learning; pattern classification; recursive discriminant functions and unsupervised estimation. *Agrawala, Ashok K., T-SMC 71 Oct* 403-404 (2E05)
Unsupervised learning; pattern clustering; combining supervised and unsupervised learning. *Cooper, David B., T-SMC 71 Oct* 398 (2D12)
Urban development; detection of changes from aerial photographs; computer-aided detection. *Kawamura, Joseph G., T-SMC 71 Jul* 230-239 (1E04)
Urban problems; garbage collection; nonlinear programming model for manpower allocation. *Altman, Stanley M., T-SMC 71 Jul* 289-291 (2E03)
Urban transportation; air pollution control in San Francisco Bay Area: pollution-level constraints and transportation options within given constraints. *Burton, Robert W., T-SMC 71 Oct* 307-313 (1B05)

V

Visual pattern perception; learning and recognition of patterns. *Noton, David, T-SSC 70 Oct* 349-357 (2D11)
Visual target tracking; *cf.* Eye tracking movements

W

Walsh functions; application to pattern recognition; complex-valued nonlinear discriminant function for many-valued patterns. *Uesaka, Yoshinori, T-SMC 71 Jul* 194-215 (1B04)
Walsh functions; information transmission applications; book (Review, *T-SMC 71 Apr* 188). *Harmuth, H. F.*, Springer (New York, NY) 1970
Walsh-Hadamard transforms; application to probability functions of discrete random variables. *Peari, Judea, T-SMC 71 Apr* 111-119 (1B09)
Wiener filters; Kalman filter construction assuming only covariances required to construct Wiener filter are known. *Anderson, Brian D. O., T-SMC 71 Apr* 119-128 (1C05)
Word recognition; words in unsegmented sentences; variable length vector pattern recognition. *Harley, Thomas J., Jr., T-SMC 71 Oct* 391-394 (2D05)