

## 1993 IEEE Fellows

Congratulations to the following members of the Neural Networks community who were elected to Fellow status in the IEEE. The nominations of Bob Marks and Shiro Usui were evaluated by the Awards Committee of the Neural Networks Councils. The others were evaluated by other societies as noted, although several have been active in NNC activities. The wide range of achievements and interests of these new fellows reflects the diversity and strength of the community.



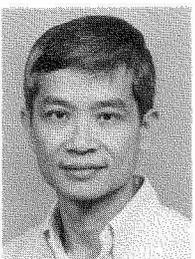
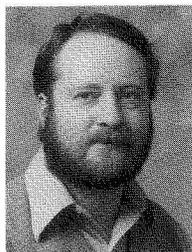
•**Robert J. Marks II—For leadership in, and contributions to, the field of neural networks**

Dr. Marks is a Professor in the Department of Electrical Engineering at the University of Washington, Seattle. Dr. Marks was a founder and the first President of the IEEE Neural Networks Council (1990-91). He is a Fellow of the Optical Society of America. He is co-founder and current President of Multidimensional Systems Corporation and is a founder of Financial Neural Networks, Inc.

He is the Editor-in-Chief of the *IEEE Transactions on Neural Networks* and serves as an Associate Editor of the *IEEE Transactions on Fuzzy Systems*. (Neural Networks)

•**Howard C. Card—For contributions to the experimental and theoretical modeling of microelectronic devices.**

Dr. Card has held academic appointments at Manchester, Manitoba, Waterloo, and Columbia University, with a sabbatical year at Oxford. He has been a consultant to IBM Watson Research Center and an in-house instructor at Bell Labs. His early research was on device physics and integrated circuits, his later work on parallel VLSI computations. He is currently a Distinguished Professor at the University of Manitoba, where his research interests are in VLSI, neural learning, and the relations between biology, physics, and computation. (Electron Devices)



•**Charles K. Chui—For contributions to approximation and wavelet theories and to their application to signal processing**

Dr. Chui is Director of the Center for Approximation Theory and Distinguished Professor of Mathematics, with a joint appointment in the Department of Electrical Engineering at Texas A&M University. He is co-editor-in-chief of the interdisciplinary journal, *Applied and Computational Harmonic Analysis (ACHA)*: (Academic Press). Among his publications are three volumes in the Springer-Verlag Series in Information Science and *An Introduction to Wavelets* (Academic Press). (Signal Processing)



•**Shiro Usui—For contributions to applications of neural networks to color vision discrimination**

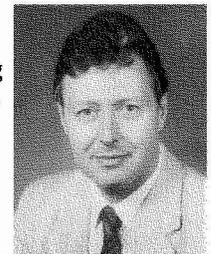
Dr. Usui is currently Professor and Head of the Biological & Physiological Engineering Laboratory in the Department of Information and Computer Sciences at the Toyohashi University of Technology Toyohashi, Japan. His Laboratory pioneered a new interdisciplinary field, Physiological Engineering, to further the understanding of biological and physiological systems by combining electrophysiology with information sciences. His earlier “bottom-up” research into biological signal processing, retinal physiology, and modeling and identification of biological systems has modulated into a “top-down” approach, pioneering the application of artificial neural networks to elucidate physiological systems, such as color vision. (Neural Networks)

•**Renato De Mori—For contributions to symbolic and quantitative methods of signal interpretation and understanding**

Dr. De Mori was born in Milan, Italy in 1941 and received a Doctorate degree in Electronic Engineering from Politecnico di Torino in 1967.

Since 1986, he has been Professor and the Director of the School of Computer Science at McGill University, Montreal,

Quebec, Canada. In 1991, he became an associate of the Canadian Institute for Advanced Research and project leader of the Institute for Robotics and Intelligent Systems, a Canadian Center of Excellence. His research interests include stochastic parsing techniques, connectionist models, and reverse engineering. (Computer)



•**Sargur N. Srihari—For contributions to character recognition and document understanding systems.**

Dr. Srihari is the Director of the Center of Excellence for Document Analysis and Recognition and is Pattern Recognition Professor of Computer Science at the State University of New York at Buffalo. Srihari is a coauthor of over 135 papers, two United States patents and is the author of an IEEE tutorial on Computer Recognition and Error Correction. (Computer)

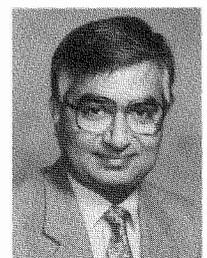


• **Yalcin Ayasli**—For contributions to the design and development of wideband GaAs monolithic microwave integrated circuits (MMIC's)

Dr. Ayasli is Vice President of Technology and CEO of Hittite Microwave Corporation, Woburn, Massachusetts, which he founded in 1985 to develop and market microwave integrated circuits for commercial and military sensor and communication applications. He has published technical papers on the design and implementation of wideband microwave amplifiers and signal control components and holds thirteen patents. (Microwave Theory and Techniques)

• **Petros Ioannou**—For contributions to the theory of robust adaptive control

Petros A. Ioannou was born in Cyprus on 3 February 1953. He received the B.Sc. degree with First Class Honors from University College, London, in 1978 and the M.S. and Ph.D. degrees from the University of Illinois, Urbana, Illinois, in 1980 and 1982, respectively. Since 1982, Dr. Ioannou has been with the Department of Electrical Engineering-Systems, University of Southern California, where he is currently a Professor and also the Director of the Center of Advanced Transportation Technologies. He teaches and conducts research in the areas of adaptive control, neural networks and intelligent vehicle and highway systems. (Control Systems)



• **Jitendra K. Tugnait**—For contributions to statistical signal processing and stochastic systems analysis

Dr. Tugnait is a professor in the Department of Electrical Engineering, Auburn University in 1989. He was first with the University of Iowa and then the Long Range Research Division of the Exxon Production Research Company, Houston. His research interests are in statistical signal processing

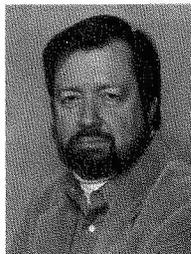
and stochastic systems analysis (with emphasis on higher-order statistics), with applications to communications, control and image/signal processing. (Control Systems)

• **Nozumu Hoshimiya**—For contributions and leadership in the field of biomedical engineering

Dr. Hoshimiya is currently a professor in the faculty of engineering at Tohoku. He was previously a professor at Hokkaido University.

His principal fields of interest are multichannel functional electrical stimulation (FES) as a neural prosthesis, especially applications to the rehabilitation fields; and self-organizing neural networks, especially on the recognition and generation of spatio-temporal patterns. (Engineering in Medicine and Biology)

• **Robert Fischl**—For contributions to the design and understanding of power systems.



• **Robert J. Thomas**—For leadership in power systems engineering education and research, and for contributions to the analysis and control of power systems.

Dr. Thomas is Professor of Electrical Engineering at Cornell University. His research interests are broadly in the areas of analysis and control of nonlinear continuous and discrete time systems with applications to large-scale electric power systems. His educational research interests are concerned with electronically mediated instruction in engineering education and collaborative design. (Power Engineering)

• **Andreas Kelen**—For leadership in the application of partial discharge analysis to machine insulation.

Dr. Kelen was born in 1920. From 1956-1984 he was with ASEA Co. Central R&D Department. Since 1984 he has been a consultant and lecturer at Polytechnic Institutes. From 1985-1993 he was editor and sole producer of "Dielectrics and EI News Bulletin" He is currently with AK International E.I. Consultants in Sweden. He is also an active wine taster and authority in the field. (Dielectrics and Electrical Insulation)



• **Luigi F. Malesani**—For contributions to research, education, and industrial development in power electronics. (Industry Applications)

### INTERACTIVE NEURAL NETWORKS, FUZZY LOGIC

**DESIRE/NEUNET IS UNIQUE.** Create new networks by typing and screen-editing readable matrix operations like

**VECTOR** layer2 = sigmoid(weight\*layer1 + bias)  
**VECTOR** member = one - abs(x - X); null, one  
**DOT** output = member\*ruletab1

Compile, execute immediately - no annoying delays. Combine neural nets, robots, physiology, differential equations, FFTs, complex-frequency plots, matrix inversion, graphics. Up to 16,000 synapses plus up to 2000 differential equations, different integration rules.

\$735 (PC), \$2700 (SPARC; \$1800 educational), with 2 **DESIRE** texts (MIT Press 1991, McGraw-Hill 1989). Interactive neural-net C source-code generator \$7500.

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