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Presenting the Editorial Board

With this first issue of Volume 2 (IJN90/1) I am glad to introduce the members of the Editorial Board and the publishing support of Elsevier Science Publishers (North-Holland), represented by its Mathematics and Computer Science Section. At the same time, I am glad to inform you that because of the acceptance and demand *Neurocomputing – An International Journal (IJN)* – will be published world-wide six times a year beginning in 1990 (Volume 2).

Shun-ichi Amari is Professor at the University of Tokyo, Department of Mathematical Engineering and Information Physics. Two main areas of research are: mathematical foundations of neural network theory and information geometry. In the first mentioned area his work includes statistical neurodynamics, dynamical theory of neural fields, associative memory, self-organization and a general theory of neural learning. In the second area his work aims at developing and applying modern differential geometry to statistical inference, information theory and control system theory.

David Casasent is Professor at Carnegie-Mellon University, Pittsburgh, PA, in the Department of Electrical and Computer Engineering, where he is the George Westinghouse Professor and Director of the Center for Excellence in Optical Data Processing. He is contributor for books and other publications on various aspects of optical data processing, image pattern recognition, and real-time signal processing. He has organized annual SPIE Cambridge Conferences on Intelligent Robots and Computer Vision since 1982. He is in the Board of Governors of SPIE. He was President of Pittsburgh chapters of the IEEE-ED and the Optical Society of America.

Gérard Dreyfus is Professor of Electronics at the École Supérieure de Physique et de Chimie Industrielles de la Ville de Paris (ESPCI) and head of the Electronics Research Department. His interests include applications and parallel implementations of optimization methods including simulated annealing and neural networks. Professor Dreyfus is co-author of "La Méthode da Recuit Simulé" (IDSET, Paris, 1989) and co-editor of "Neural Networks from Models to Applications" (IDSET, Paris, 1989).

Kunihiko Fukushima is Professor in the Department of Biophysical Engineering of Osaka University. He was Senior Research Scientist at the NHK Science and Technical Research Laboratories. His major research interest is the mechanism of information processing in the brain, and he is engaged in the synthesis of neural network models of the mechanism of visual and auditory pattern recognition, selective attention, learning, self-organization, and memory. He is author of three books in this field (written in Japanese): "The Philosophy and Bionics of the Visual System" (IEICE, 1976), "Neural Networks and Self-Organization" (Kyoritsu, 1979), and "Neural Networks and Information Processing" (Asakura, 1989). Professor Fukushima is President of the Japan Neural Network Society and on the Governing Board of the International Neural Network Society.

Stan Gielen is Professor at the Department of Biophysics at the University of Nijmegen, The Netherlands. His research interests include information processing in sensory and motor systems in man and animal, robotics and neural networks. Professor Gielen is the director of the Foundation for Neural Networks in The Netherlands, which in-

itiates and coordinates research activities on neural computing at several Dutch universities in collaboration with the industry.

Robert Hecht-Nielsen lectures neurocomputing at the Electrical and Computer Engineering Department of the University of California, San Diego, CA. He founded and managed the neurocomputer development and neural network applications programs at Motorola and TRW. He is Co-founder and Chair of the Board of HNC, Inc. He is Co-founder of the ICNN/IJCNN conference series and Founding Governing Board Member of the International Neural Network Society. Robert Hecht-Nielsen is holder of a US patent on a processor for spectral pattern classification. He developed the counterpropagation neural network model. He is author of numerous articles and of the book "Neurocomputing" (Addison – Wesley, Reading, MA, 1990).

Jeanny Herault is head of the Institute des Sciences et Techniques of the University Joseph Fourier of Grenoble. His field of research involves neural network modeling at various levels: from membrane to large adaptive networks. His interests include theoretical studies, computer simulation, design and realization of neural electronic machines and applications in Image and Signal Processing. Professor Herault is coordinator of the ESPRIT project NERVES.

R. Colin Johnson is an editor for advanced technology publications. He served as Microsystems and Software Editor for the Electronics magazine. He also worked with McGraw-Hill and Electronic News. He was Senior Editor and Executive Editor at Electronic Engineering Times and founded the Computer Engineering and the Current Technology sections in this magazine. He is Advanced Technologies Editor for EE Times. He is contributor to The New York Times, Omni, The Scientist, Datamation, PC AI, Macintosh News among other magazines. C. Johnson is also author of a series of technology reports including the Neural Network Almanac. He is author of the book "Cognizers – Neural Networks and Machines that Think" (John Wiley & Sons, 1988).

Robert J. Marks II is Professor at the faculty of the Department of Electrical Engineering at the University of Washington, Seattle, WA. He was Chair of the IEEE Neural Networks Committee and was co-founder and first Chair of the IEEE Circuits & Systems Society Technical Committee on Neural Systems & Applications. Professor Marks was also elected the first President of the IEEE Council of Neural Networks. He was co-founder and first President of the Puget Sound Section of the Optical Society of America. His research interests include signal analysis, detection theory, signal recovery, optical computing, signal processing and artificial neural processing.

Yoh-Han Pao is the George S. Dively Distinguished Professor of Engineering at Case Western Reserve University, Cleveland, OH, with appointments in Electrical Engineering and Computer Science. He was founding director of the Center for Automation and Intelligent Systems Research at this University. He has also served as director of the National Science of Foundation's Division of Electrical, Computer and Systems Engineering. He was founding editor of the Academic Press series on quantum electronics. He is author of the book "Adaptive Pattern Recognition and Neural Networks" (Addison – Wesley, Reading, MA, 1989). His current interests are expert systems, adaptive pattern recognition, neural nets and applications of these technologies.

András J. Pellionisz is a theoretical neuroscientist and currently visiting the NASA Ames Research Center, Biomedical Research Facility, Neurocomputer Laboratory. Professor Pellionisz has worked in Keele University (England), University of Iowa and Stanford University before joining the faculty of the New York University Medical Center, Department of Physiology and Biophysics. He has developed a tensor theory of the nervous system, which led to a US patent; a tensorial "Sensorimotor Coordination" device, based on an understanding of the function of the cerebellum. For his accomplishments in research in neural computing, comprised by Tensor Network Theory of the geometry of brain function and for its in-

fluence on theoretical/experimental neuroscience, he won the Alexander von Humboldt Prize 1989 from the Federal Republic of Germany.

David E. Rumelhart is Professor at Stanford University, Stanford, CA, Department of Psychology. He was an active member of the well-known PDP research group joined at UCSD (University of California in San Diego). The original primary interest was to develop PDP models for cognitive psychology. The final results were also relevant for computing science and artificial intelligence and as a basis for neurophysiological information processing and neuroscientists. The pioneering work of this group is documented in the books "Parallel Distributed Processing – Explorations in the Microstructure of Cognition, Vol. 1/2" (MIT Press, 1986) and "Explorations in Parallel Distributed Processing" (MIT Press, Cambridge, MA, 1988). A broad and intensive interest within the research community in back-propagation and other learning schemes arised through this work.

Philip Treleaven is Professor at the University College London (UCL), Department of Computer Science. Previously he was the Senior Research Fellow in the Department of Computer Science at the University of Reading, England. Before that he was a Senior Research Associate in the Computing Laboratory of the University of Newcastle upon Tyne, where he led the Computer Architecture Group. He has also worked at the Fifth Generation Research Institute (ICOT) in Tokyo. His research interests include neural computing, parallel computer architecture, new forms of programming languages, fault-tolerant computing, and very large scale integration. He is involved among others in the ESPRIT II project PYGMALION, where UCL has helped to develop a neural programming environment. Professor Treleaven organizes the European Seminar on Neural Computing in London annually.

I myself work at the German Aerospace Research Establishment, Robotics & Automation Group. My research interests are: computational models of concurrent computation, massively parallel and learning architectures for their use in multisensory integration and adaptive control systems. Currently our group is working on ROTEX (RObotics Technology EXperiment), which will fly with the West German D2-Mission in 1992. One of the challenging experiments will to be grasp a floating object in a rack of the Space Shuttle; the control commands for the robot gripper will be computed on the ground; the visual sensor data fusion is computed on a coarse-grained parallel computer. In the past I worked on heuristic methods for minimization for VLSI silicon compilers and in the industrial development of hardware and system software for real-time automation systems.

I am confident that we all together will improve in bringing you state-of-the-art information and reports on developments and applications at the cutting-edge out of the neurocomputing scenery.

V. David Sánchez A.
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Editor-in-Chief