

# Editorial

## IEEE TRANSACTIONS ON NEURAL NETWORKS: Editorial Report and Passing the Baton



Jacek M. Zurada (left) and Marios M. Polycarpou

**T**HIS issue marks a crossroads ending my six-year mission to lead the IEEE TRANSACTIONS ON NEURAL NETWORKS. I am pleased to announce that beginning on January 1, 2004, my able colleague and friend, Dr. Marios M. Polycarpou, will assume the responsibility of Editor-in-Chief. Please join me in congratulating Marios on his appointment. I can think of no better choice for this demanding and selfless service mission. In addition to being a prolific researcher and author, Marios has served on the TRANSACTIONS' Editorial Board since 1998, and has done an outstanding job as the Neural Networks Society Vice-President for Conferences during 2002–2003.

After service to the readers and the profession for this long, I must acknowledge that the job of an Editor-in-Chief of a large TRANSACTIONS has been a very unique one. Soon after I began my term in 1998, I realized that managing a publication of this size is a monumental task. It requires a huge investment in time and careful awareness of policies and procedures. For a large part, it directs the Editor's attention to the big picture of the dis-

cipline of neural networks, and its associated publishing strategies. Yet, on a daily basis, the Editor needs to help with many smaller details with which authors, reviewers, and editors cope as their manuscripts mature and find their way into print.

Finally, the focus of each editor must be on fairness that is nowhere codified and hardly measurable, but that should underlie all editorial actions. This is because such actions translate into successes or failures of many hardworking individuals, all trying to contribute their findings to the stock of common knowledge. Acceptance of their papers, in turn, results in establishing their reputation and presence in the discipline of neural networks. Here, editorial impartiality is also of paramount importance because many editorial decisions ultimately impact the author's chances for promotion, academic tenure, recognition, and other forms of professional advancement.

Foremost, the Editor must distinguish between very good, good, passing, and deficient material. He or she must remain very well informed and involved in arriving at decisions. During my tenure I have seen many low points, such as poor papers arriving at my Editorial Office that I had to reject before passing them to reviewers. About 5% of papers ended up in this cat-

TABLE I  
IEEE TRANSACTIONS ON NEURAL NETWORKS: PUBLICATIONS AND CITATIONS HIGHLIGHTS 1997–2003

Year	1997	1998	1999	2000	2001	2002	2003
Submissions*	310	318	276	289	279	315	349
Articles Published	130	127	144	138	147	143	143
Impact Factor	1.395	1.280	1.405	1.096	1.479	1.404	Available in 2004
Total Cites in ISI Journals	1890	2497	2762	3051	3146	3565	Available in 2004

\* Letters, Book Reviews and submissions to Special Issues not included.

egory. Other lows have included lengthy waiting times for reviews of otherwise good manuscripts that were too long or too time-consuming to review. Too often as well, I had to mediate priority rights disputes between the authors, not to mention plagiarism and self-plagiarism charges. I also had to deal with unfortunate and hard-to-detect double or overlapping submissions coming mostly from ill-informed authors. On the positive side, many submissions have been so well-written and important that they were accepted after minimal revision. Acknowledging such manuscripts and accepting them shortly thereafter for publication have been the high points of my editorial tenure.

What was also very inspiring was the genuinely unselfish attitude of the hundreds of reviewers and many, if not most Associate Editors. Oftentimes, their returned reviews have been so detailed and insightful that the fortunate author was just left to cutting-and-pasting because nothing could fix the manuscript better than the anonymous comments and suggestions. Proofs of theorems have often been fixed or clarified, formulas re-derived or corrected, and simulations repeated and pointedly commented on. I have always been happy when such complete, helpful reviews have been offered to the authors. These have been good moments in my editorial tenure, and serendipitous ones for the authors.

Over these six years, the TRANSACTIONS has undergone many changes. Following the recommendations from the Society Review Committee in 2001, submissions of Briefs have been discontinued. More importantly, for the last two years, authors have been offered an option to submit their manuscripts in electronic format (PDF) via the dedicated TNN website. The instant, cost-free, paperless submission is currently preferred by over 95% of authors. For such e-papers we have an accelerated, semi-automated review process in place. As a result, most papers that do not require full second review cycle are now published within one year from their initial submission. For an archival engineering publication of this rank and prestige, this is indeed an impressive rate, especially considering that the production alone of a single issue of the TRANSACTIONS takes about 11 weeks.

Looking back at the thirty-six issue, 9,648-page marathon, a review of basic publications highlights is in order. Table I summarizes the quality, quantity, and impact of the TNN papers during 1997–2003. The final acceptance rate measure as a ratio of papers submitted to those published averaged (after taking

into consideration submissions to Special Issues included in the Articles Published count but excluded from the “Submissions” row) over the six-year period has been about 34%.

It can also be seen that the TRANSACTIONS not only enjoys popularity among authors and continues to receive many submissions, but its consistently high Impact Factor remains among the highest among technical journals, the TRANSACTIONS series included. In simple terms, this means that TNN articles are often cited by the readers who, inspired by what they read, reference TNN articles at an increasing rate. As shown in the table, papers from the TNN have been cited 3,565 times in 2002 in the journals included on the ISI–JCR list.

In order to incubate and gather new ideas under one roof, and to pave the way for new research directions in neurocomputing and related areas, TNN has always been open to Special Issues. Six Special Issues have been published in 1998–2003 [1]–[6]. Three more are scheduled to appear by summer 2005 [7]–[9]. The proposals for new Special Issues have always been welcomed, and as it has turned out, most proposals submitted have gained the applause and consent of the Editorial Board. In addition, feedback provided by the sitting Associate Editors to the prospective Guest Editors have offered them invaluable advice on how to succeed.

As are other IEEE periodicals, the TRANSACTIONS is available on IEEEExplore for individual subscribers, as a part of institutional All-Periodical Packages, or IEEE Electronic Library (IEL). This provides extremely convenient access to both the current and archival issues of the Transactions. IEEEExplore also makes it very easy to link to the references cited in papers, while IEL also facilitates access to the supporting literature published in various conference proceedings sponsored by the IEEE.

I could not end my tenure without taking this opportunity to thank our readers for their continuing support, and to encourage them to continue their active participation. I am also indebted to over 4,160 reviewers (but more likely to over 5,000 since the Editorial Office did not keep database records of reviewers of e-papers in 2002–2003) who have evaluated TNN manuscripts.

I am especially grateful to the team of 102 dedicated Letters Editors, Associate Editors, Abstracts, and Book and Media Review Editors whose volunteer advice I have gratefully followed.

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Furthermore, most authors could not possibly be aware of the enormous managerial effort that goes into the TNN review and production effort. Here, my sincere appreciation goes to Ms. Glenna Haberzette, TNN Managing Editor, who has skillfully and attentively coordinated the multidirectional flow of letters, faxes, phone messages, and countless emails. Without Glenna's efforts, the TRANSACTIONS would not be as error-free and expeditious as it has been. I also have enjoyed excellent cooperation with Michelle Meeh and Bill Colacchio, highly-trained and professional staff members at IEEE Headquarters, who are responsible for producing the TNN at a bimonthly rate.

My gratitude also goes to Dr. Darrel L. Chenoweth, Chairman of the Department of Electrical and Computer Engineering, who has allowed Glenna and me, but ultimately also every TNN author, to use the departmental infrastructure for the benefit of the IEEE. Thanks to Darrel's understanding of editorial efforts, and his recognition of how important IEEE publications are for faculty research and for graduate students' future careers, he has been very generous in allowing us to share the university's

scarce resources towards the benefit of our Editorial Office established at the University of Louisville in late 1997.

Finally, I would like to express my gratitude to Anna, my bride of 30 years, for her patience when I had to constantly run the TRANSACTIONS at the expense of other of life's activities. Indeed, the workweek was often not long enough for my combined commitments as an endowed professor, active researcher, efficient advisor, responsive editor, NNS volunteer, and the head of the household, and we often had to wait weeks for addressing ordinary household tasks that required my attention.

I also believe that our two children, Joanna and Mark, now both young adults and in college, must also have learned something from their father's editorial experience. My belief is that they have learned more about *giving*. They hopefully have learned that *giving* means more in life than *taking*, and *giving* as opposed to *taking* is at the true root of fulfillment. And with this feeling of fulfillment of an accomplished mission, I would like to pass the baton to my talented successor, Dr. Polycarpou.

Best wishes of success for you and the TRANSACTIONS!

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**Jacek M. Zurada** (M'82–SM'83–F'96) is the S. T. Fife Alumni Professor of Electrical and Computer Engineering at the University of Louisville, Louisville, KY. He is co-editor of the 2000 MIT Press volume *Knowledge-Based Neurocomputing*, author of the 1992 PWS text, *Introduction to Artificial Neural Systems*, contributor to the 1994 and 1995 Ablex volumes *Progress in Neural Networks*, and co-editor of the 1994 IEEE press volume *Computational Intelligence: Imitating Life*. He is the author or coauthor of more than 210 journal and conference papers in the area neural networks and VLSI circuits. Since 1998, he has been the Editor-in-Chief of the IEEE TRANSACTIONS ON NEURAL NETWORKS. He is also an Associate Professor of Neurocomputing, and was an Associate Editor of the IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS—PART I and PART II, and of the PROCEEDINGS OF IEEE.

Dr. Zurada has received a number of awards for distinction in research and teaching, including the 1993 Presidential Award for Research, Scholarship and Creative Activity. He received the 2001 University of Louisville President's Distinguished Service Award for Service to the Profession. In 1999, he received the Golden Jubilee Medal from the Circuits and Systems Society. He is an IEEE Distinguished Speaker for the Neural Networks Society. He is currently serving as President of the IEEE Neural Networks Society in 2004–2005. In March 2003, he was conferred the Title of the Professor by the President of Poland, Aleksander Kwasniewski.

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**I**T IS MY pleasure to accept the baton and the high responsibility that goes along with being the Editor-in-Chief of the IEEE TRANSACTIONS ON NEURAL NETWORKS. I look forward to the challenge of disseminating the best of the latest results in the theory, design and application of neural networks. I would like to thank Professor Jacek M. Zurada for his great accomplishments as Editor-in-Chief of the TRANSACTIONS during the last six years, and for his cooperation and help during the transition period. I would also like to thank the excellent team of Associate Editors, and I look forward to working with them.

During the last couple of decades, the number of journals publishing papers in the general areas of intelligent systems and computational intelligence has increased significantly. The TRANSACTIONS has always been held to a high standard, and it is crucial that it continues to enjoy this prestigious position. My top priority as Editor-in-Chief is to ensure that the research work being published in the TRANSACTIONS is of the highest quality.

The quality of a journal can be measured in a number of quantitative ways, such as the impact factor, the number of citations in journals, the acceptance rate, etc. However, the readers of the

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journal are typically the most expert in deciding the quality of the research work being published. Therefore, it is important to elevate the crucial quality statistics as high as possible, and also to retain a high standard of quality in the opinions of our readers. It is worth remembering that despite our best efforts in the evaluation of submitted research papers, history will be the ultimate judge of the quality of a research work.

For the TRANSACTIONS to reach and retain the highest level of research quality, it is important that the material submitted in the first place is of highest quality. In this respect, I urge authors to submit their best research results in the neurocomputing area to the TNN. In return, the team of Associate Editors and I will do our best to provide fair, professional, and prompt reviews.

The 20th century has witnessed a tremendous progress in information technology, fueled by the development of powerful computing devices and communication systems. All indications are that this trend will continue in the 21st century. Neurocomputing has an important role to play in the processing of the vast volume of information that is becoming readily available and the design of intelligent systems. Neural networks is a vibrant field and I am quite confident that excellent research results will be obtained and disseminated in the TRANSACTIONS.

During the next few years, the TNN will be affected significantly (and hopefully in a positive manner) by electronic review processing and publishing. Already, we have seen the wide spread of electronic distribution via the IEEE electronic library and IEEEExplore. In addition, during the last few years,

Prof. Zurada has introduced electronic submission of papers and electronic review of papers. One of my first priorities as Editor-in-Chief is to take the necessary steps in moving the TRANSACTIONS to a fully automated system of electronic review handling. This will be an exciting new development that will make it easier for Associate Editors and for reviewers to handle the review process, which I hope will translate to faster and higher quality reviews. As a first step, starting in January 2004, the TRANSACTIONS will accept only electronic submissions. For more information, please review the *Paper Submission Guidelines and Author Information* on the journal homepage: <http://iee-nns.org/pubs/html>

In closing, I would like to thank the continuing editorial team and welcome three new Associate Editors who will join us in 2004: Derong Liu (University of Illinois at Chicago, USA), Angel Navia-Vazquez (University Carlos III de Madrid, Spain), and Ryszard Tadeusiewicz (AGH University of Science and Technology, Cracow, Poland). Finally, I would like to thank the IEEE Neural Networks Society for their confidence in me. I will do my best to maintain and enhance the reputation of the TNN in the coming years.

MARIOS M. POLYCARPOU, *Incoming Editor-in-Chief*  
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**Marios M. Polycarpou** (S'87–M'92–SM'98) received the B.A. degree in computer science and the B.Sc. degree in electrical engineering from Rice University, Houston, TX, in 1987 and the M.S. and Ph.D. degrees in electrical engineering from the University of Southern California, Los Angeles, in 1989 and 1992, respectively.

In 1992, he joined the University of Cincinnati, OH, where he is currently a Professor of Electrical and Computer Engineering and Computer Science. In 2001, he joined the newly established Department of Electrical and Computer Engineering at the University of Cyprus, where he is a Professor and Interim Department Head. His teaching and research interests include adaptive and intelligent systems, neural networks and computational intelligence, fault diagnosis, and cooperative control. He has published more than 130 articles in refereed journals, edited books, and refereed conference proceedings.

Dr. Polycarpou has been an Associate Editor of the IEEE TRANSACTIONS ON NEURAL NETWORKS from 1998 to 2003 and an Associate Editor of the IEEE TRANSACTIONS ON AUTOMATIC CONTROL from 1999 to 2002. He served as Vice President for Conferences, of the IEEE Neural Networks Society (2002–2003), and is currently Chair of the IEEE CSS Technical Committee on Intelligent Control.