by CIM Editorial Office

Interview with the President of the IEEE Computational Intelligence Society, Marios M. Polycarpou

I t is with great excitement that the Computational Intelligence Society's Administrative Committee (AdCom) elected Prof. Marios M. Polycarpou to serve as the President of the IEEE Computational Intelligence Society for the two year period between January 1, 2012–December 31, 2013. Prof. Polycarpou brings a wealth of leadership experience to our Society having served in various executive positions in the CIS, IEEE and other organizations for many years.

CIM: Congratulations on your appointment as the President of *IEEE Computational Intelligence Society* (CIS)!

Marios: Thank you. It is an immense honor and privilege to serve as the President of the IEEE Computational Intelligence Society for the coming two years. I look forward to the interaction with the members of our Society and the large number of volunteers.

CIM: Before we discuss your new role and future plans for our society, can you tell us a little bit about your background?

Marios: I was born and raised in Cyprus, which is the third largest island in the Mediterranean Sea. It's a very beautiful place, but of course, I am biased! Cyprus has a long and colourful history of more than 10,000 years and is currently one of the 27 members of the European Union, using Euro as its currency.

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Following my graduation from high school and a two-year mandatory army service, I studied in the USA under a Fulbright scholarship. I obtained a B.A degree in Computer Science and a B. Sc degree in Electrical Engineering from Rice University in 1987 and my M.S and PhD degrees in Electrical Engineering from the University of Southern California in 1989 and 1992 respectively. In 1992, I joined the University of Cincinnati, Ohio, initially as an Assistant Professor, and eventually became a full Professor of Electrical and Computer Engineering and Computer Science. After 18 years in the USA, in 2001, I relocated with my family back to Europe to become the first faculty to join the newly established Electrical and Computer Engineering Department at the University of Cyprus (the first ECE department in the country), where I served as founding Department Chair between July 2001 and Feb 2008. I feel privileged of having had this once-in-a-lifetime opportunity and I am proud of what we have accomplished in terms

Family photo during daughter's high school graduation; from left, wife Maria, son Michael and daughter Zoe.

of initiating the Electrical and Computer Engineering department at the University of Cyprus and the high quality of academic and research opportunities that it currently provides to young people in Cyprus.

In 2008 together with a small team of colleagues, I initiated the KIOS Research Center for Intelligent Systems and Networks (www.kios.ucy.ac.cy) at the University of Cyprus. I am currently serving as the Director of the KIOS Research Center, which has attracted more than 6 M€ in research funding and currently supports more than 40 researchers, including 12 post-docs.

My research interests include intelligent systems and control, adaptive and learning systems, fault diagnosis and accommodation, cooperative control and distributed information processing. I have worked in several application domains, including automation in healthcare devices, water distribution networks, electric delivery systems, computer networks, autonomous vehicles, and transportation.

CIM: Please tell us a little bit about your family?

Marios: My family consists of my wife, Maria, and our son Michael (22 years old) and daughter Zoe (19 years old). My wife has a Masters in Fine Arts and another in Art Education and is a high school art teacher. She also has had a couple of solo art exhibitions. Both Michael and Zoe are cur-

rently studying at universities in England. In fact, this is the first year that none of the kids are living in the house, so now we are discovering a new experience of having more time together as a couple.

CIM: How did you get into the field of computational intelligence and who or what has influenced you the most in your research?

Marios: As an undergraduate student at Rice University, I had great teachers and mentors (Boyd Pearson, Sid Burrus, Thanos Antoulas), who served as role models and inspired me to further pursue my research interests. During my graduate studies at the University of Southern California (USC), I found an environment which promoted academic excellence. My PhD advisor, Petros Ioannou, instilled in his graduate students the desire to pursue research excellence at the highest level. During my time at USC, I took some courses on neural networks, which ignited the spark to pursue research in designing and analyzing stable neural network control schemes. We were one of the very first groups to develop rigorous stability proofs for intelligent control algorithms in 1990. After my first faculty appointment at the University of Cincinnati, I contin-

ued this work and also initiated new research directions. In the area of fault diagnosis, we developed a new approach based on learning systems for fault detection, isolation and accommodation in nonlinear systems. Our approach initiated a strong interest in the field, and is currently being pursued by a large number of research groups.

CIM: What has been the most professionally satisfying event of your career?

Marios: One of the most rewarding elements of my job is working with graduate students. In my research career, I was fortunate to have worked with extremely smart and diligent graduate students, whom I strived to help become independent researchers. I have graduated a number of PhD students, who are currently employed as faculty in universities, in research centers and in the industry. Three of my graduate students have won Best Thesis Awards.

CIM: How long have you been involved with the society and in what capacity?

Marios: I have been actively involved with the Society for the last 14 years. I started as an Associate Editor of the *IEEE Transactions on Neural Networks* in January 1998 and served for 6 years. Between January 2000 to December 2001,

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Marios at the Great Wall.

With wife Maria at the greatest feast in the world during WCCI 2010 in Barcelona!

Profile: Marios M. Polycarpou

Professional Qualifications:

- ❑ Ph.D., Electrical Engineering, University of Southern California, USA (1992)
- ❑ M.S., Electrical Engineering, University of Southern California, USA (1989)
- ❑ B.Sc., Electrical Engineering, Rice University, USA (1987)
- ❑ B.A., Computer Science, Rice University, USA (1987)

Current positions:

- ❑ Professor, Department of Electrical and Computer Engineering, University of Cyprus, Cyprus, European Union, (2001–present)
- ❑ Director, KIOS Research Center for Intelligent Systems and Networks, University of Cyprus, Cyprus, European Union, (2008–present)

Institutions or companies where you have taught/conducted research:

- ❑ University of Cyprus, Department of Electrical and Computer Engineering, Cyprus, EU, (2001–present)
- ❑ University of Cincinnati, Department of Electrical and Computer Engineering and Computer Science, Ohio, USA (1992–2005)
- ❑ University of Southern California, Department of Electrical Engineering, USA (conducted research between 1989–1992)
- ❑ Served as Technical Consultant for several companies and organizations including: SDL Inc., USA; Barron & Associates Inc., USA; US Air Force Research Lab, USA; US Office of Naval Research, USA.

Proudest accomplishment:

In 2001, I relocated with my family from USA to Europe to become the first faculty member to join the newly established Electrical and Computer Engineering (ECE) Department at the University of Cyprus, where I served as founding Department Chair between July 2001 and February 2008. We admitted the first undergraduate and postgraduate students in September of 2003, and had the first graduates in 2007. These were the first engineering students in Cyprus who could pursue their university studies in their home country.

The Electrical and Computer at the University of Cyprus is now flourishing. There are currently 15 faculty members, with 7 more faculty lines in the process of being filled. The Department has more than 400 students and is very active in research, with more than 60 Ph.D. students.

Highlights of International Academic and Professional Recognition:

- ❑ Editor-in-Chief of the *IEEE Transactions on Neural Networks* (01/2004–12/2009).
- ❑ President of the IEEE Computational Intelligence Society (01/2012–12/2013).
- ❑ IEEE Fellow – *for contributions to the theory and application of intelligent systems and control*, (2006).
- ❑ *IEEE Distinguished Lecturer* in the area of computational intelligence (01/2010–present)
- ❑ Participated in more than 50 research projects/grants totalling more than $15 Million.
- ❑ Nominated by students for the *Professor of the Year Award*, University of Cincinnati, 1996.
- ❑ Invited Keynote Plenary Speaker at 15 international conferences/symposia during the last 3 years.
- ❑ Research work received more than 5000 citations.

Courses you especially enjoy teaching:

At the undergraduate level, the introductory course on feedback control. At the graduate level, the intelligent control course.

What is your motto:

You must be the change you want to see in the world.
  Mahatma Gandhi

Most memorable vacation:

I have had a number of enjoyable vacations but probably the most memorable vacation was in Hawaii, at the Big Island. The natural beauty there is amazing. Of course, the quality of vacation depends not only on the place that you visit, but even more so on the traveling companions. While vacationing on the Big Island, I was traveling with my family. The kids were then 10 and 6 years old; now the "kids" are both in college.

Interests/Hobbies:

Hiking, swimming, reading, art appreciation, backgammon, pool.

I served as an AdCom member of the Neural Networks Council, as representative of the Control Systems Society. Between January 2002 to December 2003, I served as CIS Vice President for Conferences. In January 2004, I was appointed Editor-in-Chief of the *IEEE Transactions of Neural Networks* and served in that role for 6 years, until December 2009. I have served in the Awards Committee for several years, including as Chair of the Awards Committee in 2010. I have also served as a member of the CIS Publications Committee, the CIS Conference Committee and the Neural Networks Technical Committee.

CIM: In your opinion, what are the strengths and weaknesses of CIS, and what difference has the CIS made in the past?

Marios: The CIS is in great shape! To a large extend, this is the result of the excellent job done by my predecessors and the large number of committed volunteers. The Society has been blessed to have had truly visionary leaders, who succeeded to promote it from Neural Networks Council to Neural Networks Society and later to Computational Intelligence Society.

CIS is a vibrant community of researchers. The CIS Publications are top ranked, while our conferences are well organized and attended. Both our membership and volunteer base are growing. The Society finances are in good shape, even though the current financial crisis also has an impact on our reserves.

CIM: What plans and priorities do you have for the society in the coming year? What are some of the immediate plans you would like to execute once your presidency begins?

Marios: During my term as President of the CIS, I would like to focus on some issues which I consider key for the long-term success of the Society:

❏ *High Quality Publications.* The quality of the journals reflects significantly on how well the Society is doing.

❏ *Strong CIS Conferences.* Currently, we have four main conferences (IJCNN, FUZZ-IEEE, CEC, SSCI) and a number of smaller conferences. Currently, only the World Congress on Computational Intelligence (WCCI) provides an opportunity for the whole society to get together (every two years). I look forward to interacting with the CIS Vice President for Conferences to see if we can improve on that.

❏ *Enhance CIS Membership, Especially Among Young Researchers.* As the society moves forward, it is important to have new blood coming in. I will be working with the Vice Presidents for Members Activities and Technical Activities on this issue.

❏ *Integration of Our Community Around Computational Intelligence.* Our society is the integration of three distinct communities: neural networks, fuzzy systems and evolutionary computation. The challenge is to better integrate our activities and facilitate closer synergy within the society, to provide a framework for capturing and incorporating new computational intelligence methods that may be developed in the future.

❏ *Incorporation of Computational Intelligence Into Undergraduate and Postgraduate Curricula.* Currently, in most academic institutions, a computational intelligence course may be offered as an elective at the undergraduate or postgraduate level. A key challenge ahead is to try to incorporate a general course on computational intelligence into undergraduate and postgraduate curricula. To achieve this, it is important to have available textbooks. I look forward to working with the CIS Vice President for Education on this important issue.

CIM: Computational intelligence has been around for many years, with a focus on the advancement of biologically and linguistically motivated computational paradigms. What is your vision for the society?

Marios: Computational intelligence is at the heart of many new technological developments. As technology advances, we are able to generate massive amounts of data in real time and transmit these almost instantaneously to just about anywhere we wish. The processing and interpretation of such data is a key ingredient of "smart" computational devices that are being developed. The computational intelligence approaches that we develop provide the key tools for achieving smarter devices.

As we move forward, computational intelligence will continue to play a key role in scientific and technological developments. My vision for the Society is to be at the forefront of these new advances and developments in the area of computational intelligence—whatever they may be—by promoting both fundamental research and applications.

CIM: What advice would you have for CIS members who want to get involved in our society activities?

Marios: The most fundamental advice is to pursue high quality research work, which can be published in the best journals and conferences. Good research opens up a lot of doors. Once you achieve a certain level of research accomplishment, then it is useful to get involved in the society activities. For young members, probably the best way to start getting involved is by becoming an active reviewer for journals and conferences. There is always a need for good reviewers.

The CIS is a large network of volunteers. There are many opportunities to get involved once you make yourself available. I believe that becoming involved is very rewarding, although it will require some portion of your time. However, you will have a great opportunity to learn new things and to meet new friends with similar interests. Quite possibly these friendships will last for a very long time and they may even result in research collaborations.

CIM: Thanks very much for speaking with us. We wish you a very successful 2012 and 2013!

Marios: Thank you!

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