



MARCELO H. ANG, JR, Singapore

Marcelo H. Ang, Jr. (M'88) received the BSc and MSc degrees in Mechanical Engineering from the De La Salle University in the Philippines and University of Hawaii in the USA in 1981 and 1985, respectively, and the Ph.D. in Electrical Engineering from the University of Rochester, New York in 1988, and served as an Assistant Professor of Electrical Engineering. In 1989, he joined the Department of Mechanical Engineering of the National University of Singapore (NUS), where he is currently an Associate Professor and Acting Director of the NUS' Advanced Robotics Center. His research interests span the areas of robotics, mechatronics, autonomous systems, and applications of intelligent systems. He teaches robotics; creativity and innovation, applied electronics and instrumentation; computing; design and related areas. In addition to academic and research activities, he is actively involved in the Singapore Robotic Games as its founding chairman and the World Robot Olympiad as a founding member of its Advisory Council.

IEEE Activities:

REGIONS: 10

SECTIONS/CHAPTERS: Member, Management Committee, Local Chapter, IEEE Robotics and Automation Society

SOCIETY:

Member, IEEE Robotics and Automation Society

Member, IEEE Industrial Electronics Society

CONFERENCES:

General Co-Chair, 2017 IEEE International Conference on Robotics and Automation, Singapore;

Technical Program Chair, 2009 IEEE/ASME International Conference on Advanced Intelligent Mechatronics, Singapore;

Technical Program Chair, 2008 IEEE International Conference on Systems, Man and Cybernetics, Singapore

Qualifications: I have been a member of IEEE since 1988, when I first joined IEEE in USA. I moved to Singapore in 1989, with primary objective of accelerating robotics science and technology developments in Singapore. The first thing I did in Singapore was to seek out robotics enthusiasts and form an informal group to work together to promote robotics science and technology. The group brainstormed and decided that the best way to create impact is through an annual robotics competition. We then formed the Singapore Robotic Games main committee in 1991 and held the annual Singapore Robotic Games (SRG) since 1993. The committee has then evolved to the Robotic Games Society, a society registered with the Singapore government, in which I continue to serve as founding president. Besides the goal of education, the SRG helps in the technology development by providing benchmarks for capabilities in robotics. It also encourages innovation among the young by providing them a forum to display their creations.

I was a key IEEE member who set up the Singapore chapter of the IEEE Robotics and Automation Society. I have been a member of the Management Committee of the RAS Singapore chapter every year, and in some years I have served as an officer.

I have followed the developments of the IEEE RAS since its earlier days and attended their conferences at least once every year since 1990. I have informally interacted with the various committees of IEEE and attended meetings as an observer. I am therefore familiar with the various IEEE RAS activities around the world.

I firmly believe in the mission and vision of RAS. I have enjoyed very much my interactions with the RAS community, and I would like to play a more active role in helping RAS achieve its mission and vision.

Major Accomplishments:

1. I was a key member of the team that bid for IEEE ICRA 2017 which was held in Singapore with a recommend number of registered participants (over 3,200).
2. I was technical program chair of 2 IEEE conferences which were held in Singapore: 2008 IEEE SMC, and 2009 IEEE/ASME AIM.
3. I hosted and was local chair for 2 major international symposia in robotics: 2004 ISER and 2013 ISRR. (These are not IEEE RAS Conferences but the key people are all members of IEEE RAS).
4. I created the Singapore Robotic Games in 1991, which is annual event that runs up to today. I was able to gather the whole robotics community in Singapore to work together to achieve this, in cooperation with the Singapore Chapter of IEEE RAS.

Position Statement: I believe robotics science and technology will have the most tremendous impact on the quality of our lives. We have seen tremendous progress and have witnessed useful applications; but these applications have been mainly confined to urban and developed cities. There are immense opportunities for applications in rural areas with poor communities relying mainly on farming as the main source of livelihood. In such areas, we don't need the best technologies, but "good-enough" technologies are enough to solve critical problems and create great impact in the quality of lives of such communities. But science and technology is not enough to create real impact. Innovation and enterprise development are needed in order to bring science and technology pervasively available to all. I would like to play an active role, through the IEEE RAS, in shaping robotics development and applying it throughout the world, with focus on the less developed countries and emerging economies, where there is a dire need for robotics and automation. Beyond problem statements and solutions provided by science and technology, I will find a bridge linking these with business opportunities for enterprise development.

Plans include:

- Active promotion of the Distinguished Lecturer program and finding other means to bring experts to countries without IEEE RAS local chapters.
- Promote IEEE RAS activities, especially international conferences in countries who typically do not attend international conferences.

- Create an IEEE RAS delegation to visit selected countries and regions, to see how robotics science and technology can be applied to solve compelling problems.
- Facilitate technology transfer through collaborations and consultancies by experts; and initiation of robotics schools in developing countries.
- Link robotics science and technology to entrepreneurship and opportunities leading to real-life deployments in “bottom of pyramid” markets (such as rural areas in ASEAN).
- Find creative ways to acknowledge contributions of members.
- Promote robotics as an excellent tool to foster interest in science, mathematics and technology among the youth, through development and sharing of educational and related resources.
- Promote robotics culture to the general public through robotic games and related events with an emphasis on robotics as “fun” and pervasive, and facilitate growth of hobbies in robotics.
- Improve the dialogue between members and solicit feedback on how the society can help its members.
- Improve the sharing of information and resources through the internet, by creating a one-stop resource for solution providers, people with problem statements, entrepreneurs and industry and providing networking among these groups of people.

I am looking forward to contributing actively to the RAS management team in shaping and achieving its vision.