



I-MING CHEN, Singapore

I-Ming Chen (M'95-SM'06-F'12) Fellow of IEEE and Fellow of ASME, received BS from National Taiwan University in 1986, MS and PhD from California Institute of Technology, Pasadena, CA in 1989 and 1994 respectively. He joined School of Mechanical and Aerospace Engineering of Nanyang Technological University (NTU), Singapore in 1995. He is Director of Robotics Research Centre in NTU from 2013 to 2017. He was Deputy Program Manager of Singapore's A*Star Industrial Robotics Program from 2013 to 2017, and a member of Robotics Task Force of National Research Foundation responsible for Singapore's strategic R&D plan in future robotics. His research interests are in construction and logistics robots, wearable sensors, human-robot interaction, and reconfigurable automation. Prof. Chen has published more than 300 papers in refereed international journals and conferences as well as book chapters. He has been the technical editor of *IEEE/ASME Transactions on Mechatronics* and now editor of *IEEE Transactions on Robotics*.

IEEE Activities:

SECTIONS/CHAPTERS:

- Chairman, IEEE Robotics and Automation Society, Singapore Chapter, 2006-2007, 2015-2016
- Vice Chairman, IEEE Robotics Automation Singapore Chapter 2014
- Founding Chairman, IEEE Robotics and Automation Society, Singapore Chapter [led Singapore Chapter to win the Best RAS Chapter award in 2003], 2001-2003

SOCIETY:

- Member, Fellow Evaluation Committee, Robotics and Automation Society (2015-2017)
- Member, Fellow Nomination Committee, Robotics and Automation Society (2012-2014)
- Chairman, Technical Committee, Prototyping for Robotics and Automation, IEEE Robotics and Automation Society, 2002-2007

CONFERENCES:

- General Chairman, 2017 IEEE International Conference on Robotics and Automation (ICRA 2017), Singapore
- General Chairman, 2009 IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM2009), Singapore
- General Chairman, IEEE Conferences Cybernetics and Intelligent Systems, and Robotics, Automation and Mechatronics (CIS-RAM06), Bangkok, Thailand, 2006

OTHER:

- Editor, *IEEE Transactions on Robotics* (2015-present)
- Associate Editor, *IEEE Transactions on Robotics* (2007-2011)
- Technical Editor, *IEEE/ASME Transactions on Mechatronics* (2003-2009)
- Senior Editor, 2015 IEEE Int. Conf. on Robotics and Automation (ICRA 2015), Seattle, USA
- Senior Editor, 2014 IEEE Int. Conf. on Robotics and Automation (ICRA 2014), Hong Kong, China
- Senior Editor, 2013 IEEE Int. Conf. on Robotics and Automation (ICRA 2013), Karlsruhe, Germany
- Senior Editor, 2011 IEEE/RSJ Int'l Conf. on Intelligent Robots and Systems (IROS 2011), San Francisco, USA

Qualifications: First, I am an active supporter for the IEEE Robotics and Automation Society (RAS). I have been a member of IEEE RAS since 1995, and have attended almost every edition of ICRA. I was General Chairman of ICRA 2017. ICRA2017 was held in Marina Bay Expo and Convention Centre, Singapore successfully in May 2017. This is a milestone for Singapore and Southeast Asian countries for the future of robotics R&D.

Second, I like to connect and work with people in the same research field, i.e., robotics, and to promote it at professional as well as layman levels. Hence, I was motivated to found the RAS Singapore Chapter. My interpersonal skills, communications, organization, and management capabilities have been shown in leading the chapter to win RAS Chapter of the Year Award in 2003. Therefore, I believe that the same skill set will well qualify me to be a candidate of the RAS Adcom member.

Third, I have extensive IEEE conference organization and management experiences in various capacities. The complexity of hosting international conferences locally and in another country provided me extensive experiences in risk management of international conferences. Such experience in risk management will be very useful to RAS AdCom.

Finally, my experiences in the technical editorial ships in *IEEE Transactions on Robotics* and *IEEE/ASME Transactions on Mechatronics* have given me a broad view of technical activities in RAS. Such experience, I believe, will benefit greater RAS members.

Major Accomplishments:

1. Founded RAS Singapore Chapter in 2001, and subsequently led the Chapter to win the RAS Chapter of the Year Award in 2003.
2. Successfully hosted IEEE Conferences Cybernetics and Intelligent Systems, and Robotics, Automation and Mechatronics (CIS-RAM06) in Bangkok, Thailand in 2006 with over 300 registered participants to promote RAS in Southeast Asia.
3. Successfully hosted IEEE/ASME Int'l Conf. Advanced Intelligent Mechatronics (AIM'09) in Singapore in 2009 with the largest number of registered participants (400+) in AIM history.
4. Successfully hosted 2017 IEEE International Conference on Robotics and Automation in Singapore with more than 3500 participants and 70 over exhibitors and sponsors as the largest event in ICRA history.
5. As Chairman of IFToMM (International Federation on Promotion of Mechanism and Machine Sciences) Technical Committee (TC) on Robotics and Mechatronics, successfully led the TC on international research collaboration and exchange, coordination and organization of conference and symposium activities. All TC Robotics and Mechatronics members are prominent faculty in the top universities in their respective countries.

Position Statement: The advancement of robotic technology has brought robots and automation systems into our daily living at an unprecedented speed, such as vacuum cleaner robots, healthcare robots, exoskeleton for the disabled and wearable sensors for health monitoring, etc. Many countries have identified robotics as the next wave of industrial revolution and put in tremendous R&D resources into it in order to capture the new booming opportunities in robotics. As the world leading professional organization, IEEE Robotics and Automation Society is and will be definitely at the forefront of this new wave and leads the world trend in R&D as well as in education to bring robotics closer to human.

If elected AdCom member of RAS, I plan to work with other RAS AdCom members on the following matters:

1. *Broadening the RAS membership base to more non-OECD countries and developing world.*

To support IEEE envisioned future as a truly global organization, we not only need to promote IEEE RAS in the developing world but also need to use the cutting edge technology we have developed to help those needed in a timely and affordable manner. Singapore is situated in a very strategic location in the Southeast Asia. When we formed the RAS Singapore Chapter, we often inquired by people from other countries from time to time on timely and affordable robotic and automation solutions for their needs. Thus, I would like to work with RAS members to come up with new mechanisms in terms of membership drive, special activities (R&D and educational), and special organization structure to cater for the needs of these places. These efforts will eventually show that we are truly serving the humanity.

2. *Enriching RAS conferences with more new media tools.*

Existing conferences are either too many or too large so as to make the social and technical interaction ineffective. Nowadays many new media tools, such as Facebook, Twitter, Video streaming, etc., have flooded our daily life. However, how to make full use of these technologies for conferences and meetings are still lagging behind the personal uses. Hence, I would like to work with AdCom members in looking into the Future Conference, with mobile devices, co-existing virtual robotic and digital avatars and physical participants as a long-term alternative to the current conference format. ICRA 2017 has demonstrated the use of tablet device as a complete conference program and proceedings carrier in order to reduced paper wastage. I hope this long-term project will eventually benefit all IEEE members.

3. *Promoting for interdisciplinary research and activities in RAS.*

The world now is more and more complex. Issues like mass urbanization, shortage of energy and water, environmental protection, sustainable development, and healthcare, are major concerns worldwide. How does RAS keep its relevance to these issues and align its activities to the solutions of these issues is very crucial to the future development of RAS. Hence, I would like to work with RAS AdCom members to look into technical and educational activities to promote more interdisciplinary activities in these related issues to renew the RAS.