

## "One Robot is Robotics, Ten Robots is Automation"

Automation has come of age. As Raja Chatila aptly summarized in the quote above, automation addresses the challenges that arise when robots scale beyond proof-of-concept. Unmanned aerial and undersea vehicles and driver-assist technologies are thriving businesses. The General Electric Corporation is now focusing on automation algorithms and data analytics and predicts this will be a \$225 billion market within 5 years, and Germany just approved the sale of Kuka to Midea Corp in China to provide robots for assembly automation. These developments build on ongoing research in Big Data, Cloud Computing, Deep Learning, Open-Source Software, and Government/Industry initiatives such as the "Internet of Things", "Smarter Planet", "Industrial Internet", "Industrie 4.0.", and "Made in China 2025". Automation is playing an increasingly central role in the global economy and in our daily lives.

My term as Editor-in-Chief of T-ASE began in October 2011 and concludes with this issue. It has been a great privilege over the past 5 years to work with a brilliant and dedicated group of colleagues. The Editorial Board works with almost a thousand reviewers annually (see List in this issue) to select the best papers on Automation, emphasizing scientific results that advance efficiency, quality, productivity, and reliability for applications ranging from manufacturing to healthcare, security, transportation, and agriculture.

T-ASE is now in its 12th year. Over 1000 papers are submitted each year (an increase of 300% over 2011). Fewer than 15% are accepted. The T-ASE Impact Factor is now 2.696 -- for the first time slightly higher than 2.028 for IEEE Transactions on Robotics (T-RO) and 2.489 for the International Journal of Robotics Research (IJRR). The Impact Factor is based on citations to papers published in the past two years and is notoriously volatile : one must beware of geeks bearing bibliometrics.

Over the past 5 years the Editorial Board has achieved a number of innovations: creating a taxonomy of 10 Methodologies and 10 Application Areas, formalizing the duties of AEs, Editors, and the EiC and increasing the diversity of the Editorial Board, updating our Reviewing Policy, initiating a Reviewer Honor Roll, adding the Papercept reviewer database, encouraging authors to publish data, code, CAD models, and other media with their papers, organizing Ten Year Anniversary events, reducing the paper backlog with a "Mega-Issue" of 880 pages, writing an RAS Automation Committee Report (led by Peter Luh), encouraging the formation of Automation-based Technical Committees (led by Mengchu Zhou), creating new flyers, website, announcing our Table of Contents with each issue on two international mailing lists: automation-worldwide and robotics-worldwide, and

working closely with the Steering Committee for the annual Conference on Automation Science and Engineering (CASE).

My thanks to the many Guest Editors who have taken the initiative to propose and after approval, review and select papers for the 17 Special Sections T-ASE published on: Equipment and Operation Automation in the Semiconductor Industry, Automation in Green Manufacturing, Micro Assembly for Manufacturing at Small Scales, 2012 Workshop on the Algorithmic Foundations of Robotics (WAFR), 2012 Conference on Automation Science and Engineering (CASE), Advances in Discrete-Event Systems for Automation, Integrated Optimization of Industrial Automation, 2013 CASE, Cloud Robotics and Automation, Networked Cooperative Autonomous Systems, Home Automation, 2014 Workshop on the Algorithmic Foundations of Robotics (WAFR), Human-Centered Automation, 2014 CASE, 2015 International Conference on Cyber-Physical Systems (ICCPS), the Internet of Things, and Emerging Advances in Logistics.

Last year Antonio Bicchi gallantly led the team that added Robotics and Automation Letters (RA-L) to the IEEE Robotics and Automation Society's portfolio of publications. A distinguishing feature of RA-L is rapid publication of short papers (under 9 pages, six months from submission to publication, including revision and re-review). T-RO and T-ASE will continue to be the primary RAS destinations for high-quality, high-impact research papers that benefit from additional time and/or space. It is often the case that significant results benefit from feedback from peers at workshops and conferences as well as from manuscript reviewers. These papers may also require more space for thorough presentation of experimental results, proofs, analysis, and comparison with prior work.

I thank Kazuhiro Kosuge and the RAS Publications Activities Board for appointing me as EiC (despite some initial hesitation on my part;). I also thank the RAS Presidents, Raja Chatila, David Orin, and Satoshi Tadokoro and VPs of Publications Alessandro De Luca, Antonio Bicchi, and Eugenio Guglielmelli who have provided steadfast support for T-ASE.

I am very fortunate to have benefitted from the ongoing counsel and help from past-EiC and friend Peter Luh. Peter has played an active role in T-ASE since the very beginning and continues to attend every Board Meeting to provide insights and valuable advice. The T-ASE Senior Editors have been wonderful to work with and I have relied considerably on their good judgement: Han Ding, Maria Pia Fanti, Vijay Kumar, Spyros Reveliotis, Sanjay Sarma, Leyuan Shi, Yu Sun, Dawn Tilbury, Michael Wang, John Wen, and Mengchou Zhou.

I am very grateful for the dedication, hard work, and superb organizational skills of Samantha Jacobs, our tireless Editorial Assistant, who coordinates a myriad of details and is such a pleasure to work with, and Pat Pena and Kathy Colabaugh who copyedit and expertly serve as liasons with IEEE.

I especially appreciate and thank my students, colleagues, family, Tiffany, Odessa, and Blooma, for granting me the time on nights and weekends to keep up with the EiC duties.

I'm happy to report that Michael Yu Wang, Senior Editor and Professor at Hong Kong University of Science and Technology, has been selected as the next EiC and will start in October. I have known Michael since we were both in Matt Mason's lab as graduate students at Carnegie Mellon. I have the utmost confidence in him and have no doubt that he will do a tremendous job leading T-ASE forward.

When he was RAS VP of Publications, Dick Volz played a fundamental role in the conception of T-ASE at the beginning of the 21st century. He was a wise and dedicated mentor, friend, and advisor who passed away in 2013. I recall sitting on his back porch in Texas, smoking a cigar with him in the midst of his cancer treatments, and asking him if it were okay to be smoking while undergoing chemotherapy. His answer was typical: "At least I know these cigars won't kill me."

So as the sun goes down and I sit on the old broken-down river pier watching the long, long skies overhead and think of T-ASE, I remember Dick Volz. I remember Dick Volz.

- Ken Goldberg,  
UC Berkeley, September 2016  
(with thanks to Jack Kerouac)