

1. Biographical sketch

MengChu Zhou (S'88-M'90-SM'93-F'03) received his B.S. degree in Control Engineering from Nanjing University of Science and Technology, Nanjing, China in 1983, M.S. degree in Automatic Control from Beijing Institute of Technology, Beijing, China in 1986, and Ph. D. degree in Computer and Systems Engineering from Rensselaer Polytechnic Institute, Troy, NY in 1990. He joined New Jersey Institute of Technology (NJIT), Newark, NJ in 1990, and is a Distinguished Professor of Electrical and Computer Engineering and the Director of Discrete-Event Systems Laboratory. His research interests are in intelligent automation, Petri nets, Internet of Things, Web service, workflow, big data, transportation and energy systems. He has over 800 publications including 12 books, 500 journal papers (over 400 in IEEE transactions), and 29 book-chapters. He holds 12 patents and several pending ones.

He was invited to lecture in Australia, Canada, China, France, Germany, Hong Kong, Italy, Japan, Korea, Mexico, Qatar, Saudi Arabia, Singapore, Taiwan, and US and served as a plenary/keynote speaker for many conferences. He is the founding Editor of IEEE Press Book Series on Systems Science and Engineering and Editor-in-Chief of IEEE/CAA Journal of Automatica Sinica. He served as Associate Editor of IEEE Transactions on Robotics and Automation, IEEE Transactions on Automation Science and Engineering, and IEEE Transactions on Industrial Informatics, and Editor of IEEE Transactions on Automation Science and Engineering. He served as a Guest-Editor for many journals including IEEE Internet of Things Journal, IEEE Transactions on Industrial Electronics, and IEEE Transactions on Semiconductor Manufacturing. He is presently Associate Editor of IEEE Transactions on Intelligent Transportation Systems, IEEE Internet of Things Journal, IEEE Transactions on Systems, Man, and Cybernetics: Systems, and Frontiers of Information Technology & Electronic Engineering. He was General Chair of IEEE Conf. on Automation Science and Engineering, Washington D.C., August 23-26, 2008, General Co-Chair of 2003 IEEE International Conference on System, Man and Cybernetics (SMC), Washington DC, October 5-8, 2003 and 2019 IEEE International Conference on SMC, Bari, Italy, Oct. 6-9, 2019, Founding General Co-Chair of 2004 IEEE Int. Conf. on Networking, Sensing and Control, Taipei, March 21-23, 2004, and General Chair of 2006 IEEE Int. Conf. on Networking, Sensing and Control, Ft. Lauderdale, Florida, U.S.A. April 23-25, 2006. He was Program Chair of 2010 IEEE International Conference on Mechatronics and Automation, August 4-7, 2010, Xi'an, China, 1998 and 2001 IEEE International Conference on SMC and 1997 IEEE International Conference on Emerging Technologies and Factory Automation. He organized and chaired over 100 technical sessions and served on program committees for many conferences. Dr. Zhou has led or participated in over 50 research and education projects with total budget over \$12M, funded by National Science Foundation, Department of Defense, NIST, New Jersey Science and Technology Commission, and industry. He was a recipient of NSF's Research Initiation Award, CIM University-LEAD Award from Society of Manufacturing Engineers, Perlis Research Award/Fenster Innovation in Engineering Education Award/Excellence in Research Prize and Medal from NJIT, Humboldt Research Award for US Senior Scientists from Alexander von Humboldt Foundation, Leadership Award and Academic Achievement Award from Chinese Association for Science and Technology-USA, Asian American Achievement Award from Asian American Heritage Council of New Jersey, and Outstanding Contributions Award, Distinguished Lecturership, Franklin V. Taylor Memorial Award and the Norbert Wiener Award from IEEE SMC Society, and Distinguished Service Award from IEEE Robotics and Automation Society. He is founding Co-chair of Enterprise Information Systems Technical Committee (TC) and Environmental Sensing, Networking, and Decision-making TC of IEEE SMC Society. He is also VP for Conferences and Meetings of IEEE SMC Society. He has been among most highly cited scholars for years and ranked top one in the field of engineering worldwide in 2012 by Web of Science/Thomson Reuters and now Clarivate Analytics. He is a life member of Chinese Association for Science and Technology-USA and served as its President in 1999. He is Fellow International Federation of Automatic Control (IFAC), American Association for the Advancement of Science (AAAS) and Chinese Association of Automation (CAA).

Google Scholar Profile (Dec. 10, 2019): 33,260 Citations with H index = 89.

2. Abstracts of two lectures

Internet-of-Things-Based Smart Systems

Human beings have experienced two major industrial revolutions. The first one took place in the 19th century, which replaced muscle power from humans and animals with mechanical power. The second one started in the middle 20th century, which provided people and societies with Internet. It was built with the technologies from computing, communication, networking and information storage. Both offered unprecedented productivity increases. What will be the next one? This talk intends to answer this question by presenting some recent development of Internet of Things (IoT) and smart systems. IoT was selected by IEEE as a major initiative to develop and advance over the next few years. Several recent studies have predicted the huge growth of IoT and tremendous benefits to the world economy. It was expected that 26 billion IoT units would be installed by year 2020, generating \$300 billion in revenue. The IoT will generate an additional \$1.9 trillion in economic value. We plan to present a system engineering approach to Internet-of-Things-based smart systems and their applications to smart manufacturing, smart cities, smart grid, smart medical and healthcare services.

Intelligent Task Prediction and Scheduling to Realize Green Cloud Computing Systems

More and more applications, e.g., e-commerce and social networking, run in cloud data centers (e.g., Amazon and Google). Minimizing the consumption of electric power and thus energy cost while maintaining their user-desired performance has now become an increasingly important focus of attention. The consumption of power boosts data centers' cost. Brown energy consumption negatively impacts our environment. Requirements from environmental protection demand the reduced use of brown energy, especially that from coal. Hence, most large cloud data centers prefer renewable energy sources such as wind and solar energy. Can we exploit the characteristics of the geographical distribution in real-life environment to schedule tasks intelligently? This talk answers it by focusing on intelligent optimization methods. It introduces emerging progress made in this field and emerging challenges on how to realize various cost-effective task scheduling methods for cloud data centers, including: 1) traditional methods for task scheduling and dynamic resource allocation; 2) existing task prediction and machine learning-based prediction methods; 3) spatial task scheduling and resource provisioning for cost minimization for cloud data center providers; 4) temporal-spatial task scheduling for profit maximization in hybrid cloud computing systems; and 5) open research problems, directions and outlooks for future studies.

3. Statement about availability for delivering lectures.

I am available and willing to give SMC DL lectures twice a year and more if such need arises.