# Impact and Accomplishments of Professor Mo Jamshidi in the IEEE

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Abstract— Professor Mo Jamshidi is a globally renowned leader in not only IEEE SMC Society but also the engineering world. He conceptualized and developed the System of Systems Engineering (SoSE). This scheme is now widely acknowledged and extends to the fields of engineering, economics, science, social issues and medicine. I have known him since 2000 and it is my great honor and privilege to describe the impact he has had, and the accomplishments he has achieved, in his role in the IEEE and in the international engineering field.

I. MY IMPRESSIONS OF PROF. MO JAMSHIDI

Mo Jamshidi, the Lutcher Brown Endowed Chair and Professor in Electrical and Computer Engineering at the University of Texas at San Antonio, is a very well-known scholar, researcher and educator. I met him at the World Automation Congress (WAC) in 2000 when he was the General Chair of WAC. It did not take me long to realize that he was a distinguished and great world leader in the field of engineering. His gentle, kind and warm demeanor toward the attendees was easily discernible. In WAC2000, all Japanese participants belonged to my group, and we received his cordial welcome and wonderful suggestions on our research. Since then, I have retained great respect and admiration for his work. I strongly believe that he inspired my role thereforth at future WAC symposia: as General Chair of the International Forum on Multimedia and Image Processing of the WAC2002 (Florida, USA), 2004 (Spain), 2006 (Hungary), 2008 (Hawaii, USA), 2010 (Japan) and 2012 (Mexico).

WAC consists of the following five tracks or symposia:

International Symposium on Robotics and Applications (ISORA)
International Symposium on Intelligent Automation and Control (ISIAC)
International Symposium on Manufacturing and Systems Engineering (ISOMSE)
International Symposium on Soft Computing for Industry (ISSCI)
International Forum on Multimedia and Image Processing (IFMIP)

After WAC2012, I served as the General Co-Chair of WAC2014 (Hawaii, USA) and 2016 (Puerto Rico). WAC2020 will be held in Taipei, Taiwan.

It was at WAC2010 in Kobe (Japan) that I got the opportunity to fully appreciate Professor Jamshidi’s hard work for WAC. While I was involved in the organization of the event and obtained several grants from Japanese foundations and companies to support the conference, he handled all other aspects such as paper submissions, review control, program schedule, and the intricate planning for the reception and the banquet. He has been doing these jobs every two years since 1986, and we will continue to work together since WAC is a biannual conference. With his indefatigable energy and zest for work, you cannot help but develop great admiration and affection for Prof. Mo Jamshidi. He is, indeed, an invaluable asset for WAC committees.

Figure 1. Prof. Jamshidi at WAC2006.
This message gives us deep insights about his passion for SoSE and he ushered a new era of systems engineering in IEEE. Thus, he pioneered the SoSE concept. He followed this up by organizing the first SoSE conference in the form of the 2006 IEEE/SMC International Conference on System of Systems Engineering. He continued to organize further iterations of the conference for the years 2010 to 2014. This conference was called System of Systems Engineering Conference (SoSE) from 2015 to 2017, but it has now been renamed (with effect from the 13th conference in 2018) as the Annual Conference on System of Systems Engineering.

III. IMPACT AND ACCOMPLISHMENTS IN OTHER FORUMS

In large-scale system engineering, Prof. Jamshidi’s first publication was “Large-Scale Systems Modeling and Control” (North-Holland, 1983). This book, known as the “FIRST TEXTBOOK,” was translated into five languages and used in more than 55 nations. After this, he published two more acclaimed books: “Large-Scale Systems: Modeling, Control, and Fuzzy Logic” (Prentice-Hall, 1996) and (with Dr. Manu Malek-Zavarei) “Time-Delay Systems: Analysis, Optimization and Applications” (Elsevier Science, 1987). These books are highly cited in Google Scholar. Prof. Jamshidi went on to publish at least 50 books and 30 book chapters. Among those, “System of Systems Engineering: Principles and Applications” [2] is well known. In that book, he wrote, “Recently, there has been a growing interest in a class of complex systems whose constituents are themselves complex. Performance optimization, robustness, and reliability among an emerging group of heterogeneous systems in order to realize a common goal has become the focus of various applications including military, security, aerospace, space, manufacturing, service industry, environmental systems, and disaster management, to name a few. There is an increasing interest in achieving synergy between these independent systems to achieve the desired overall system performance. In the literature, researchers have addressed the issue of coordination and interoperability in a system of systems (SoS). SoS technology is believed to more effectively implement and analyze large, complex, independent, and heterogeneous systems working (or made to work) cooperatively. The main thrust behind the desire to view the systems as an SoS is to obtain higher capabilities and performance than would be possible with a traditional system view. The SoS concept presents a high-level viewpoint and explains the interactions between each of the independent systems. However, the SoS concept is still at its developing stages.” Currently, we are experiencing the real reach of SoS such as autonomous cars, industrial, medical and personal robots, and AI and IoT systems for lifestyle, health care and decision-making. We must view the current systems as an SoS to obtain higher capabilities and performance than would be possible with traditional systems. His vision is not only promising but progressive as well.

On another note, I am impressed by his personal quest for quality journals. He is a volunteer extraordinaire, having founded more than five journals. The most famous among those are the international journals Intelligent Automation and Soft Computing with late Lotfi A. Zadeh as honorary editor, and Computers and Electrical Engineering. His energy and passion are unlimited in these areas as well. The
holistic impact of Prof. Mo Jasmshidi on today’s society is immeasurable, and his current and future work will undoubtedly continue to wield a vast influence in the field.

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REFERENCES


Yutaka Hata (M’90–SM’02–F’10) was born in Hyogo, Japan, in 1961. He received a B.E. degree in 1984, an M.E. degree in 1986, and a Ph.D. in 1989, all from Himeji Institute of Technology, Japan. He is currently the Dean of the Graduate School of Simulation Studies, University of Hyogo, Japan, where he is also a Professor. He spent one year in the BISC Group, University of California at Berkeley, from 1995 to 1996 as a visiting scholar of BISC Group directed by Prof. Lotfi A. Zadeh. His research interests include medical systems, health monitoring systems, fuzzy systems, and ultrasonic diagnostic systems. He has received 15 international awards, including the Franklin V. Taylor Best Paper Award (IEEE SMC 2009). He is an associate editor of IEEE Trans. on SMC Systems, and a regional editor of Intelligent Automation and Soft Computing, and so on.