



# **WORLD AUTOMATION CONGRESS**

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**Lifetime Achievement Keynote**

# No. TUE-AM1



**Syoji Kobashi**  
**University of Hyogo**  
**Himeji, Japan**

**Time: 09:00-10:00**  
**Date Tuesday June 5, 2018**  
**Chair: Yutaka Hata, Japan**  
**Venue: Stevenson Ballroom A**

*Soft computing and artificial intelligence in medical  
image analysis*

**ABSTRACT:** A lot of multimodality data including health records, examination records, medical images, and others have been produced every minute in hospitals, houses, etc. Soft computing and artificial intelligence are expected to play a principal role of handling the medical/health big data to support diagnosis and medical treatment for physicians, health-control for persons-in-house, research & development in pharmaceutical companies, etc. Medical image analysis is one of the expected research fields. For example, cancer detection in mammography images,

organ region segmentation in MR/CT images, benign tumor classification, and so on are belonging to a category of usual classification problem in machine learning. This talk will first explain a framework of soft computing and artificial intelligence based medical image analysis, and then introduce some studies including computer-aided assessment system of rheumatoid arthritis (RA) patients in X-ray images, and surgical operation navigation system using smart glass.

**Bio: Syoji Kobashi** received BE in 1995, ME in 1997, and Doctor of Engineering in 2000, all from Himeji institute of Technology. He was an assistant professor (2000-2004) and an associate professor (2005-2016) at University of Hyogo, a guest associate professor at Osaka University, WPI immunology frontier research center (2011-2016), and am currently a professor at University of Hyogo since 2017, and a manager of Advanced Medical Engineering Research Center, University of Hyogo, since 2017. He was a visiting scholar at Department of Radiology, University of Pennsylvania in 2011-2012. His research interests include medical image understanding and analysis based on artificial intelligence. He received 15 international awards, including Franklin V. Taylor Memorial Award (IEEE-SMCS, 2009), IEEE-EMBS Japan Young Investigators Competition (EMBS Japan Chapter, 2003). He has been serving on the chair of International Forum on Multimedia and Image Processing in 2012-2018, General Co-chair of International conference on informatics, electronics & Vision (ICIEV) in 2016-2018, and Publication chair of IEEE SMC2018. Moreover, he is editor-at-large of Intelligent Automation & Soft Computing journal, an associate editor of 4 journals, and a guest editor of some special issues. And, he is organizing many special sessions in international conferences including IEEE SMC and IEEE EMBC. He is the senior member of IEEE.