Preface

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Biographical notes: Masaaki Mochimaru studied Mechanical Engineering and Ergonomics at the Kieo University in Japan, where he received his Master in Mechanical Engineering and PhD in Engineering. In 1993, he joined AIST as a researcher. In 2001, he was assigned as the Deputy Director of Digital Human Laboratory of AIST. In 2010, he launched and directed Digital Human Research Center in AIST. After 2015, he directs Human Informatics Research

Institute of AIST. His research interests are related to measurement and modelling of 3D human body shapes and motions and their applications. In recent years, his research interests are expanded to service engineering and servitisation. Through 1997 to 2016, he was the Chair of ISO TC159 (ergonomics)/SC3 (anthropometry and biomechanics).

James Yang is currently an Associate Professor and the Director of Human-Centric Design Research Lab, and Associate Chair, Director for Undergraduate Studies, Department of Mechanical Engineering, Texas Tech University, Lubbock, Texas, USA. He received his BS and MS in Automotive Engineering from the Jilin University, and PhD in Mechanical Engineering from the University of Iowa. He was a faculty member at the Department of Automotive Engineering, Tsinghua University, Beijing and Research Engineer at the Center for Computer Aided Design, the University of Iowa. His research interests include physics-based human modelling and simulation, bio-inspired systems, ergonomics, biomechanics, healthcare engineering, tire modelling and vehicle dynamics, and robotic and mechanical systems.

Xuguang Wang is a Research Director at French Institute of Science and Technology for Transport, Development and Networks (IFSTTAR, formerly INRETS) and the Leader of the team 'Biomechanics and Ergonomics'. He joined INRETS in 1991 after a PhD thesis in solid mechanics from the Ecole Centrale de Lyon. His current research concerns parametric human modelling, human motion control and simulation, seat comfort, automotive ergonomics, discomfort modelling for workplace design such as vehicle interior design. He has been involved in several European and industrial research projects. He organised the first International Symposium on Digital Human Modelling Conference in Lyon in 2011.

Matthew P. Reed is the Don B. Chaffin Collegiate Research Professor and Head of the Biosciences Group of the University of Michigan Transportation Research Institute. He is also a Research Professor in Industrial and Operations Engineering and directs the Human Motion Simulation Laboratory in the Center for Ergonomics at the University of Michigan. His research focuses on vehicle safety, engineering anthropometry, and ergonomics, including tools for the design of vehicle interiors and widely used posture prediction and motion simulation algorithms for use with digital human models. He is a fellow in SAE International and the author of over 280 research publications.

Gunther Paul holds a Master's in Mechatronics and PhD in Ergonomics from the TU Darmstadt in Germany. After working in research and academic teaching at the TU Darmstadt for five years, he joined FORD Motor Company in 1999. He developed and managed projects in product development, information technology and manufacturing engineering at Ford, Faurecia and Daimler until 2009. He was then invited to Australia, to establish a laboratory and research group in ergonomics at the University of South Australia. He is currently a Senior Lecturer for Occupational Safety, Health and Ergonomics at Queensland University of Technology and Postgraduate Research Coordinator of the School of Public Health and Social Work. He is a co-chair of the IEA Technical Committee for Human Simulation and Virtual Environments.

Digital human modelling (DHM) research has been led by the automotive industry. While the automotive industry is still active in this research fields, DHM research and applications are expanding to another industries, such as apparel, home appliances, sports and fitness. DHM research contributes to assessment of usability, safety and comfort of those products without physical mock-ups and volunteer testing.

This special issue of the *International Journal of Human Factors Modelling and Simulation* contains selected papers that were presented at the 3rd International Digital Human Modeling Symposium (DHM2014) in Tokyo in 2014. The symposium was followed by a meeting of the Technical Committee on Human Simulation and Virtual Environments (TC HSVE) of the International Ergonomic Association (IEA). Following a decade of the DHM conferences held under the auspices of Society of Automotive Engineers (SAE) International, the 1st symposium was held in Lyon in 2011, and the 2nd was held in Ann Arbor in 2013. Research presented at the symposiums has extended well beyond the automotive industry. Fifty-one papers were accepted for presentation at DHM2014 after a peer-review process. Papers covered the following topics:

- anthropometry and 3D human body modelling

- posture and motion simulation

- motion capture and reconstruction (motion generation based on motion database)

- impact and deformation analysis (impact biomechanics and finite elemental analysis for tissue deformation)

- model standards and protocols

- hand modelling

- applications and software demonstration

- DHM (thermal modelling and medical applications).

Four outstanding papers were selected for this issue and subject to additional peer review. The four papers cover major topics on DHM, such as anthropometry and body modelling, motion simulation, body deformation and ergonomic assessment.