

**PROCEEDINGS OF
THE 2012 INTERNATIONAL CONFERENCE ON
MODELING, SIMULATION & VISUALIZATION METHODS**

MSV 2012

Editors

**Hamid R. Arabnia
Leonidas Deligiannidis, Andy Marsh
Ashu M. G. Solo**



WORLD COMP'12

July 16-19, 2012

Las Vegas Nevada, USA

www.world-academy-of-science.org

©CSREA Press

This volume contains papers presented at The 2012 International Conference on Modeling, Simulation & Visualization Methods (MSV'12). Their inclusion in this publication does not necessarily constitute endorsements by editors or by the publisher.

Copyright and Reprint Permission

Copying without a fee is permitted provided that the copies are not made or distributed for direct commercial advantage, and credit to source is given. Abstracting is permitted with credit to the source. Please contact the publisher for other copying, reprint, or republication permission.

Copyright © 2012 CSREA Press
ISBN: 1-60132-226-7
Printed in the United States of America

CSREA Press
U. S. A.

Foreword

It gives us great pleasure to introduce this collection of papers to be presented at the 2012 International Conference on Modeling, Simulation and Visualization Methods (MSV'12), July 16 through 19, 2012, at Monte Carlo Resort, Las Vegas, USA.

The Academic Co-Sponsors, Corporate Co-Sponsors, Co-Sponsors At-Large and Organizers of this year's conference include (separated by semicolons):

Bioinformatics & Computational Biology Program, George Mason University, Virginia, USA; Biomedical Cybernetics Laboratory, HST of Harvard University and MIT, USA; Minnesota Supercomputing Institute, University of Minnesota, USA; Center for Cyber Defense, NCAT, USA; Argonne's Leadership Computing Facility of Argonne National Laboratory, Illinois, USA; The Center for Advanced Studies in Identity Sciences (CASIS: NC A&T, Carnegie Mellon, Clemson, UNC Wilmington), USA; Knowledge Management & Intelligent System Center (KMIS) of University of Siegen, Germany; Intelligent Cyberspace Engineering Lab., ICEL, Texas A&M University, Commerce, Texas, USA;UMIT, Institute of Bioinformatics and Translational Research, Austria; Hawkeye Radiology Informatics, Department of Radiology, College of Medicine, University of Iowa, Iowa, USA;The International Council on Medical and Care Compunetics, Europe; US Chapter of World Academy of Science (<http://www.world-academy-of-science.org/>); Supercomputer Software Department (SSD), Institute of Computational Mathematics & Mathematical Geophysics, Russian Academy of Sciences, Russia; International Society of Intelligent Biological Medicine, USA; NDSU-CIIT Green Computing and Communications Laboratory, USA; Medical Image HPC & Informatics Lab (MiHi Lab), University of Iowa, Iowa, USA; High Performance Computing for Nanotechnology, USA; Manx Telecom, Europe; Computer Science Research, Education, and Applications Press; World Academy of Biomedical Sciences and Technologies; HoIP Telecom, Europe; Super Micro Computer, Inc., San Jose, California, USA; Intel Corporation; Hodges Health, UK; and OMG™. In addition, a number of university faculty members and their staff (names appear below and also on the cover of the proceedings), several publishers of computer science and computer engineering books and journals, chapters and/or task forces of computer science associations/organizations from 6 countries, and developers of high-performance machines and systems provided significant help in organizing the conference as well as providing some resources.

An important mission of WORLDCOMP (a federated congress to which this conference is affiliated with) includes "Providing a unique platform for a diverse community of constituents composed of scholars, researchers, developers, educators, and practitioners. The Congress makes concerted effort to reach out to participants affiliated with diverse entities (such as: universities, institutions, corporations, government agencies, and research centers/labs) from all over the world. The congress also attempts to connect participants from institutions that have **teaching** as their main mission with those who are affiliated with institutions that have **research** as their main mission. The congress uses a quota system to achieve its institution and geography diversity objectives."

The program committee would like to thank all those who submitted papers for consideration. About 55% of the submissions were from outside the United States. Each paper was peer-reviewed by two experts in the field for originality, significance, clarity, impact, and soundness. In cases of contradictory recommendations, a member of the conference program committee was charged to make the final decision; often, this involved seeking help from additional referees by using a double-blinded review process. In addition, papers whose authors included a member of the conference program committee were evaluated using the double-blinded review process. The only exception to the above evaluation process was for papers that were submitted directly to chairs/organizers of approved sessions/workshops; in these cases, the chairs/organizers were responsible for the evaluation of such submissions. The overall paper acceptance rate for regular papers was 27%; 20% of the remaining papers were accepted as poster papers (at the time of this writing, we had not yet received the acceptance rate for a few individual tracks.)

We are very grateful to the many colleagues who helped in organizing the conference. In particular, we would like to thank the members of the MSV'12 Program Committee who we hope will offer their help

again in organizing the next year's conference (MSV'13). The MSV'12 Program Committee members were:

- *Dr. Selim Aissi (WC Steering Committee), Senior Business Leader & Chief Architect, Visa Corporation, USA (formerly: Chief Strategist - Security, Intel Corporation, USA)*
- *Prof. Babak Akhgar (WC Steering Committee), PhD, FBCS, CITP, Professor of Informatics, Sheffield Hallam University, Sheffield, UK*
- *Prof. Naji Masned Irshyd AlQbailat, Assistant Dean for Planning, Developing and Quality, Princess Alia University College, Al-Balqa' Applied University, Shmeisani, Amman, Jordan*
- *Prof. Hamid R. Arabnia (WC General Chair & Coordinator), Elected Fellow, ISIBM; Editor-in-Chief, The Journal of Supercomputing (Springer); Member, Advisory Board, IEEE TC on Scalable Computing; University of Georgia, Georgia, USA*
- *Prof. Baharuddin Aris, Professor and Director, Universiti Teknologi Malaysia, Johor Bahru, Malaysia*
- *Dr. Ezendu Ariwa (WC Publicity Co-Chair), Chartered Fellow of The British Computer Society; Fellow of Institute of Information Technology Training; Fellow of Higher Education Academy; Chair, IEEE Consumer Electronics Chapter and IEEE Broadcast Technology Chapter (UK&RI); Associate Prof./Senior Lecturer, Strategic Information Systems, London Metropolitan University, London, UK*
- *Dr. Waqas Haider Khan Bangyal, Iqra University Islamabad, Pakistan*
- *Prof. H-P. Bischof, Rochester Institute of Technology, Rochester, New York, USA*
- *Prof. Juan-Vicente Capella-Hernandez, Universitat Politècnica de Valencia, Valencia, Spain; Executive Manager, Wireless Sensor Networks Valencia, Spain*
- *Prof. Victor Clincy, Computer Science Department, College of Science and Mathematics, Kennesaw State University, Kennesaw, Georgia, USA*
- *Prof. Kevin Daimi (WC Steering Committee), Director, Computer Science and Software Engineering Programs, Department of Mathematics, Computer Science and Software Engineering, University of Detroit Mercy, Detroit, Michigan, USA*
- *Prof. Leonidas Deligiannidis, Wentworth Institute of Technology, Boston, Massachusetts, USA*
- *Dr. Lamia Djoudi, University of Versailles, France*
- *Prof. Gerry Vernon Dozier (WC Steering Committee), Chair, Department of Computer Science; Director, Center for Advanced Studies in Identity Sciences; Center for Cyber Defense; North Carolina A&T State University, North Carolina, USA*
- *Prof. Madjid Fathi (WC Steering Committee), Director, Knowledge Management and Intelligent Systems Center, University of Siegen, Germany*
- *Dr. Bilal Gonen, University of Alaska, Anchorage, Alaska, USA*
- *Prof. George A. Gravvanis, Democritus University of Thrace, Greece*
- *Prof. Michael R. Grimaila (WC Steering Committee), Air Force Institute of Technology, Systems Engineering; Fellow of ISSA; CISM, CISSP, IAM/IEM; Editorial Board of ISSA Journal; Air Force Center of Cyberspace Research; Advisor to the Prince of Wales Fellows & Prince Edward Fellows at MIT and Harvard Universities; PC member, NATO Cooperative Cyber Defence Centre of Excellence (CCD COE) & Int'l Conf. on Information Warfare and Security*
- *Dr. Shaikh Abdul Hannan, Department of Computer Science, Vivekanand College, Aurangabad, India*
- *Dr. Seyyed Mohsen Hashemi, Dean of the Software Engineering and Artificial Intelligence Department, IAU University, Tehran, Iran*
- *Dr. Shahrām Javadi, Electrical Engineering Department, Azad University, Central Tehran Branch, Tehran, Iran; Director in Chief, International Journal of Smart Electrical Engineering*
- *Prof. D. V. Kodavade, Head, Computer Science & Engineering Department, D.K.T.E Society's Textile & Engineering Institute, Maharashtra State, India*
- *Dr. Praveen Koduru, Electrical & Computer Engineering, Kansas State University, USA*
- *Dr. B. V. Durga Kumar, Taylors University, Malaysia*
- *Dr. A. V. Senthil Kumar, Director, Department of MCA, Hindusthan College of Arts and Science, Hindusthan Gardens, India*
- *Prof. Kun Chang Lee (WC Steering Committee), Professor of MIS and WCU Professor of Creativity Science, Business School and Department of Interaction Science, Sungkyunkwan University, Seoul, South Korea*
- *Prof., Dr., Dr.h. Victor Malyshev (WC Steering Committee), Head, Supercomputer Software Department (SSD), Institute of Computational Mathematics and Mathematical Geophysics, Russian Academy of Sciences, Russia*
- *Prof. George Markowsky (WC Steering Committee), Associate Director, School of Computing and Information Science; Chair International Advisory Board of IEEE IDAACS; Director 2013 Northeast Collegiate Cyber Defense Competition; Chair Bangor Foreign Policy Forum; Cooperating Professor*

- Mathematics and Statistics Department UMaine; Cooperating Professor School of Policy & International Affairs UMaine; University of Maine, Orono, Maine, USA*
- *Prof. Andy Marsh (WC Steering Committee), Director HoIP; Director HoIP Telecom, UK; Secretary-General WABT; Vice-president ICET; Visiting Professor University of Westminster, UK*
 - *Farhad Mehran, Saman Sanat Jahan Gostar Co., Tehran, Iran*
 - *Dr. Reza Malekian, Editor-in-Chief, The International Journal of Wireless Communications & Simulation; Visiting Lecturer, Universiti Teknologi Malaysia, Malaysia*
 - *Dr. Sara Moein, Editorial board, International Journal of Science and Technology, Faculty of Engineering, MultiMedia University, Malaysia*
 - *Dr. Ali Mostafaeipour, Industrial Engineering Department, Yazd University, Yazd, Iran*
 - *Dr. Mohammad Hossein Nadimi-Shahraki, Head, Research Department, Artificial Intelligence, Faculty of Computer Engineering, Najafabad branch, Islamic Azad University, Iran*
 - *Prof. Max M. North, Professor of Management Information Systems; Pioneer of Virtual Reality Therapy; Director of Visualization & Simulation Research Center; School of Engineering Technology & Management; Southern Polytechnic State University; Marietta, Georgia, USA*
 - *Dr. Sarah M. North, Distance Learning Coordinator, Kennesaw State University, Kennesaw, Georgia, USA*
 - *Prof. James J. (Jong Hyuk) Park (WC Steering Committee), Department of Computer Science and Engineering, Seoul National University of Science and Technology (SeoulTech), Korea; President, KITCS; President, FTRA; Editor-in-Chiefs: HCIS, JoC and IJITCC Journals*
 - *Prof. Yongyuth Permpoontanalarp, Logic and Security Lab, Department of Computer Engineering, King Mongkut's University of Technology Thonburi, Bangkok, Thailand*
 - *Prof. R. Ponalagusamy, Head, Department of Mathematics, National Institute of Technology, Tiruchirappalli, India*
 - *Dr. Hassan Reza (WC Steering Committee), UND Aerospace, University of North Dakota, Department of Computer Science, Grand Forks, North Dakota, USA*
 - *Dr. Yong Shi, Kennesaw State University, Georgia, USA*
 - *Dr. Akash Kumar Singh, IT Architect, IBM, Sacramento, California, USA*
 - *Ashu M. G. Solo (WC Publicity Chair), Fellow of British Computer Society, Principal/R&D Engineer, Maverick Technologies America Inc.*
 - *Prof. Sang C. Suh (WC Steering Committee), Head and Professor, Department of Computer Science; Vice President, Society for Design and Process Science (SDPS); Director, Intelligent Cyberspace Engineering Lab (ICEL); Texas A&M University, Commerce, Texas, USA*
 - *Dr. Sim Kok Swee, Faculty of Engineering and Technology, Jalan Ayer Keroh Lama, Melaka, Malaysia*
 - *Prof. Ousmane Thiare, Department of Computer Science, Gaston Berger University, Senegal*
 - *Prof. Keshav D. Verma, Chairman, Department at S.V. (P.G.) College, Aligarh, India; Founder and Director, MS Research Laboratory (MSRL), India; Editor-in-Chief: IJNMC Journal + IJBRE Journal + MSRJ Journal*
 - *Prof. Layne T. Watson (WC Steering Committee), IEEE Fellow; NIA Fellow; ISIBM Fellow; Fellow of The National Institute of Aerospace; Virginia Polytechnic Institute & State University, Virginia, USA*
 - *Dr. Wei Wei, Xi'an University of Technology, Xi'an, P. R. China*
 - *Prof. Jeff Zadeh, Collegiate Professor and Program Chair, University of Maryland, University College Europe, Germany; University of Maryland, USA*

We express our gratitude to keynote, invited, and individual conference/tracks and tutorial speakers - the list of speakers appears on the conference web site. We would also like to thank the followings: UCMSS (Universal Conference Management Systems & Support, California, USA) for managing all aspects of the conference; Dr. Tim Field of APC for managing the printing of the proceedings; and the staff of Monte Carlo Resort in Las Vegas for the professional service they provided. Last but not least, we would like to thank the Co-Editors of MSV' 12: Prof. Hamid R. Arabnia, Prof. Leonidas Deligiannidis, Prof. Andy Marsh, and Ashu M. G. Solo.

We present the proceedings of MSV' 12.

Steering Committee, MSV 2012

<http://www.world-academy-of-science.org/worldcomp12/ws>

Contents

SESSION: VISUALIZATION, TOOLS AND TECHNIQUES

Visualizing Camera Pose for Augmented Reality Applications	3
<i>Andrew Risse, Dino Schweitzer, Scott Teel</i>	
Volumetric Intravascular Ultrasound Visualization Using Shape-based Nonlinear Interpolation	8
<i>Yonghoon Rim, David D McPherson, Hyunggun Kim</i>	
Spatial Data Structures, Sorting and GPU Parallelism for Situated-agent Simulation and Visualisation	14
<i>Alwyn V. Husselmann, Ken A. Hawick</i>	
3DNET - An Ecosystem for the Development, Evaluation, and Sharing of Visualization Workflows	21
<i>Soeren Grimm, Adriana Paluszny, Louis Parsonson, Rado Adrian, Walter Hernandez, Laurence Bourn, Atif Bajwa, Haralambos Hatzakis, Li Bai</i>	
Design Space of Network Security Visualization	28
<i>Xiaoyuan Suo</i>	
Visualization and Clustering of Document Collections using a Flock-based Swarm Intelligence Technique	35
<i>Richard H. Fowler, Raul A. Huerta, Wendy A. L. Fowler</i>	
Which Book Should I Pick? Text Visualization Based on Readability and Genre	41
<i>Hyoyoung Kim, Jin Wan Park</i>	
A GeneralL Taxonomy for Visualization of Predictive Social Media Analytics	48
<i>Stacey Franklin Jones</i>	
Visualization Tool for Apollonian Network and Packing Analysis	54
<i>Lucas Vespa</i>	
3-D Visualization of Simulink Physics Models Using Unreal Engine	59
<i>Elise Haley, David Coe, Jeffrey Kulick</i>	
Nonlinear Model Structure Identification based on Kernel Visualization	65
<i>Laszlo Keviczky, Csilla Banyasz</i>	

SESSION: SIMULATION

Computer Modeling and Simulation of Ground Penetrating Radar using Finite Difference Time Domain Code	73
<i>James Hebert, Thomas Holzer, Timothy Eveleigh, Shahyar Sarkani, John Ball</i>	
Simulation of the Human Lumbar Spine During Stooping and Squatting Using a Forward Kinematics Model	80
<i>Krunal Patel, Ahmad Ghasemipoor, Mohammad Abdoli-Eramaki</i>	
High Performance Monte Carlo and Time-Stepping Dynamics for the Classical Spin Heisenberg Model on GPUs	87
<i>Ken A. Hawick, Daniel P. Playne</i>	
Motion Simulation of the Modular Walking Robot MERO using Force and Attitude Sensors	94
<i>Ion Ion, Grigore Stamatescu</i>	
NSET - A Computational Fluid Dynamics Educational Tool	102
<i>Boris Chernyavsky</i>	
Experiences with Process Interaction Based Simulation in Education and Research	109
<i>H.P.M. Veeke, J.A. Ottjes, G. Lodewijks</i>	
Design of a Real-Time Simulator for an Electric Vehicle	114
<i>Troy Silloway, Yong-Kyu Jung, Donald Mackellar, Fong Mak</i>	
Efficient Pseudo-Random Numbers Generated from Any Probability Distribution	121
<i>Clarence Lehman, Adrienne Keen</i>	
Public Concerns and Projected Repercussions of Health Care Reform Using Simulation	128
<i>Ahmed YoussefAgha, David Lohrmann, Wasantha Jayawardene, Lesa Lorenzen-Huber</i>	
Using Serious Games to Teach Business Process Modeling and Simulation	133
<i>Claudia Ribeiro, Joao Fernandes, Andre Lourenco, Jose Borbinha, Joao Pereira</i>	
Unit-Delay Simulation with the EVCF Algorithm	140
<i>Peter M. Maurer</i>	
Review of a Programming Language Analysis in Simulation Modleing in Health Care	144
<i>Maher Amer, Suhair H. Amer</i>	
SESSION: MODELING	
Modeling Discrete Distributed Heterogeneous Systems	149
<i>Irene Pestov, Hiroki Sayama, Chun Wong</i>	

Modeling of DNA Replication	156
<i>Xiaoli Yang, Rong Ge, Yifan Cai, Charles Tseng</i>	
Exploring Information Stewardship with the Cloud Ecosystem Model	162
<i>Adrian Baldwin, Yolanta Beres, Lee Carrotte, Theofrastos Koulouris, Brian Monahan, David Pym, Simon Shiu, Chew Yean Yam</i>	
Modeling of the Movement of the Endoscopy Capsule inside G.I. Tract based on the Captured Endoscopic Images	169
<i>Guanqun Bao, Yunxing Ye, Umair Khan, Xin Zheng, Kaveh Pahlavan</i>	
Modeling Steady and Unsteady High Viscosity Piston Skirts EHL in Initial Engine Start Up	174
<i>Syed Adnan Qasim, M. Shoaib Ansari, M. Afzaal Malik</i>	
Nonlinear Modeling and Numerical Analysis for Fabricating High-performed Flexible Yarns over a Moving Solid Structure	181
<i>Feng Jie, Xu Bin Gang, Tao Xiao Ming</i>	
Overall Structural Design of Jet Engine Based on Master Model	186
<i>Jiang Fan, Rui Zhang, Xiu-li Shen, Rong-qiao Wang, Dian-yin Hu</i>	
SESSION: DESIGN, ANALYSIS, EVALUATION METHODS	
Computational Architectural Neuroscience: Towards the Computational Theory of the Human Brain Interactions with Architectural Design	195
<i>Hasti Mirkia, Arash Sangari, Mark Nelson, Majid Sarmadi, Amir Assadi</i>	
Validating Statics of Long Term Evolution Mobile Communication Systems	201
<i>Ishtiaq Ahmed Choudhry, Nazir Ahmad Zafar, Mohammad Al-Zahrani</i>	
Dynamics Analysis of Air-filled Play Equipment under Conditions of Single and Repetitive Impact	207
<i>Yuki Tokoro, Yoshifumi Nishida, Ilwoong Kim, Hiroshi Mizoguchi</i>	
A System Dynamics Approach for Complex Government Policies Design. Application in ICT Diffusion	213
<i>Yannis Charalabidis, Euripidis Loukis, Aggeliki Androutsopoulou</i>	
BEM for Collaborative Design Inception: Harnessing the Power of Clients' Design Intuition	220
<i>Alvise Simondetti, Simon Roberts, David Birch</i>	
Design A Medical Application for Android Platform using Model-driven Development Approach	227
<i>Juan Jaiber Yepes Zapata, Luz Viviana Coboleda Estepa, Juan Camilo Villa, Jose Edinson Aedo</i>	

Muscle Force Exploration Through Simulation for Passenger Seat Design 232
Sangho Park, Jinghu Piao, Murali Subramaniam, Junfeng Sun, Taesu Yim

SESSION: ALGORITHMS AND NOVEL APPLICATIONS

Generating an Informed Virtual Geographic Environment through Cell Merging in order to Geosimulate the Propagation of Zoonoses 237
Mondher Bouden, Bernard Moulin

Games for Children with Cerebral Palsy 244
Leonidas Deligiannidis

Hardware-Software Cosimulation of Feedback Controller for Synchronization of Inferior Olive Neurons 252
Desta Edosa, Keum W. Lee, Venkatesan Muthukumar, Sahjendra N. Singh

A Novel Temporal Framework for Relational Event Representation 258
Sadi Evren Seker

Interactive Computer Program: Packaging DNA into Chromosomes 264
Xiaoli Yang, Yifan Cai, Charles Tseng

ANFIS Inverse Kinematics and Precise Trajectory Tracking of a Dual Arm Robot 270
Arif Ankarali

Microarray Image Processing for Real Time Scanning with Reduced Dimensional Variables 275
Deok He Nam

Mitigation of Low Frequency Power Oscillations Generated by a Hydroelectric Generation Station of CFE-México 281
Gustavo Villa-Carapia, Olga Mora-Hoppe, Gilberto Enriquez-Harper, Francisco Sanchez Tello, Gilberto Carreon-Navarro, Elisa Espinosa-Juarez

Zonal Statistics to Identify Hot-regions of Traffic Accidents 287
Omer Soysal, Helmut Schneider, Asim Shrestha, Christy Guempel, Pei Li, Harisha Donepudi, Naveen Kondoju, Kazim Sekeroglu

A Graph Grammar Model of Financial Statements with Heterogeneous Parts 294
Takeo Yaku, Koichi Anada, Koushi Anzai, Shinji Koka, Miyuki Shimizu, Yuki Shindo

**SESSION: MODELING, SIMULATION AND VISUALIZATION METHODS:
NOVEL ALGORITHMS AND APPLICATIONS**

Analysis, Design, and Simulation of a novel Current Sensing Circuit	299
<i>Louiza Sellami, Robert Newcomb</i>	
Visualization, Analysis and Error Prediction of Supersonic Shock Angles Over Diamond Shape Aerofoil Using Hydraulic Analogy	304
<i>Akshay Garg</i>	
Onion: a Visual Formal Method for Workflow Design in Cloud Computing	312
<i>Jinho On, Sujeong Woo, Moonkun Lee</i>	
Full Digital Design and Fabrication of Building Components by Laser Forming	319
<i>Golnar Kiani, Rahinah Binti Ibrahim</i>	
Optimization Design of the U-shaped Metal Bellows	324
<i>Ling Yang, Mingjin Yang, Feng Liu, Guocai Yang</i>	
Numerical Investigation of AC Electrokinetically Induced Fluid Flow in a Circular Microchannel	329
<i>Vai Kuong Sin</i>	
The RTO-RTDB Real-Time Data Model	333
<i>Zied Ellouze, Nada Louati, Rafik Bouaziz</i>	
The Case for Meta-modeling Frameworks Specialisation	340
<i>Suzy Temate, Laurent Broto, Daniel Hagimont</i>	
Modeling and Analysis of NASA s Mission Software Development Archetypes using Petri-Net Graphs	346
<i>Amanda Pavlicek, Tai-Chi Lee</i>	
A New Trigonometric Method for Automatic Visualization of Metro Map Layout	353
<i>Somayeh Sobatimoghadam, Ahmad Absetan</i>	
Business Optimization Through a Port E-Commerce	358
<i>Georgeta Soava, Mircea Alexandru Raduteanu</i>	
An Implementation of the 16-ary Grid Graphs for the Multiply Layered Rectangular Dissections	365
<i>Koichi Anada, Koushi Anzai, Shinji Koka, Takeo Yaku</i>	
A Study of the Magnetic Permeability of Ferromagnetic Thin Films for Evaluating the GMI Effect	367
<i>Driton Rustemaj, Debashis Mukherjee</i>	

8k-ary Grid Graph Modeling of the Rectangular Dissections

370

Takeo Yaku, Koichi Anada, Koushi Anzai, Shinji Koka, Kensei Tsuchida