Technical Program Contents List

Technical Program for Tuesday August 21, 2018

TuBPC

Best Conference and Best Application Papers (Plenary Session)

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Liu, Tong
KTH Royal Inst. of Tech
Feng, Lei
KTH Royal Inst. of Tech
Hellgren, Mikael
KTH
Wikander, Jan
Royal Inst. of Tech.-KTH

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TuBPC.2
Chiller Plant Operation Optimization with Input and Model Uncertainties (I), pp. 8-13.
Zhang, Danxu
Univ. of Connecticut
Luh, Peter
Univ. of Connecticut
Fan, Junqiang
United Tech. Res. Center
Gupta, Shalabh
Univ. of Connecticut

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Thayer, Thomas C.
Univ. of California, Merced
Vougioukas, Stavros
UC Davis
Goldberg, Ken
UC Berkeley
Carpin, Stefano
Univ. of California, Merced

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Fleischer, Heidi
Univ. of Rostock
Baumann, Daniel
Univ. of Rostock
Roddelkopf, Thomas
Univ. Rostock
Klos, Michael
Yaskawa Europe GmbH
Thurow, Kerstin
Univ. of Rostock

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TuBPC.5
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Fan, Yongxiang
Univ. of California, Berkeley
Lin, Hsien-Chung
Univ. of California, Berkeley
Tang, Te
Univ. of California, Berkeley
Tomizuka, Masayoshi
Univ. of California

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TuBPC.6
Learning 2D Surgical Camera Motion from Demonstrations, pp. 35-42.
Ji, Jessica
Univ. of California, Berkeley
Krishnan, Sanjay
Univ. of California Berkeley
Patel, Vatsal
Univ. of California Berkeley
Fer, Danyal
Univ. of California, San Francisco East Bay
Goldberg, Ken
UC Berkeley

TuAT1

Room 1

Human-Centered Automation (Regular Session)

Chair: Fantuzzi, Cesare
Univ. Di Modena E Reggio Emilia
Co-Chair: Popa, Dan
Univ. of Louisville

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Physical Human-Robot Interaction Coupled with a Moving Environment or Target: Contact and Track (I), pp. 43-49.
Li, Hsieh-Yu
Singapore Univ. of Tech. and D Design
Paranawithana, Ishara
Singapore Univ. of Tech. and D Design
Yang, Liangjiong
Massachusetts Inst. of Tech
Tan, U-Xuan
Singapore Univ. of Tech. and D Design

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Adaptive Interface for Robot Teleoperation Using a Genetic Algorithm (I), pp. 50-56.
Wijayasinghe, Indika
Univ. of Louisville
Cremer, Sven
Univ. of Texas at Arlington
Saadatzi, Mohammad
Univ. of Louisville
Nasser
Peetha, Srikanth
Univ. of Louisville
Popa, Dan
Univ. of Louisville

17:10-17:30
TuAT1.3
Sabattini, Lorenzo
Univ. of Modena and Reggio Emilia
Villani, Valeria
Univ. of Modena and Reggio Emilia
Czerniak, Julia
Inst. of Industrial Engineering and Ergonomics, RWTH Aachen
Loch, Frieder
Tech. Univ. of Munich
Mertens, Alexander
Inst. of Industrial Engineering and Ergonomics, RWTH Aachen
Vogel-Heuser, Birgit
Tech. Univ. Munich
Fantuzzi, Cesare
Univ. Di Modena E Reggio Emilia

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How to Improve Deep Learning Based Pavement Distress Detection While Minimizing Human Effort, pp. 63-70.
Seichter, Daniel
Ilmenau Univ. of Tech
Eisenbach, Markus
Ilmenau Univ. of Tech
Stricker, Ronny
Ilmenau Univ. of Tech
Gross, Horst-Michael
Ilmenau Univ. of Tech

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Huang, Isabella
UC Berkeley
Bajcsy, Ruzena
Univ. of California, Berkeley
### CASE 2018

**TuAT2**  
**Trajectories & Routing (Regular Session)**  
Room 2  
**Co-Chair:** Petitti, Antonio  
**Chair:** Lennartsson, Bengt  
**University of Warwick**  
**Abstract:** A Distributed Map Building Approach for Mobile Robotic Networks, pp. 116-121.  
#### Sponsored by:  
- Petitti, Antonio  
- National Council of Res

**TuAT2.1**  
Robust and Energy Efficient Trajectories in a Stochastic Common Workspace Setting, pp. 77-83.  
- Sundström, Nina  
- Chalmers Univ. of Tech  
- Wangström, Oskar  
- Chalmers Univ. of Tech  
- Lennartsson, Bengt  
- Chalmers Univ. of Tech  
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**TuAT2.2**  
Trajectory Planning for Manipulators Operating in Confined Workspaces, pp. 84-91.  
- Kabir, Ariyan M  
- Univ. of Southern California  
- Shah, Brual C.  
- Univ. of Maryland, Coll. Park  
- Gupta, Satyandra K.  
- Univ. of Southern California  
16:50-17:10  

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- Riazi, Sarmad  
- Chalmers Univ. of Tech  
- Bengtsson, Kristofer  
- Sekvensa  
- Lennartsson, Bengt  
- Chalmers Univ. of Tech  
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- Assad, Fadi  
- Univ. of Warwick  
- Rushforth, Emma  
- Univ. of Warwick  
- Ahmad, Musab Husni  
- The Univ. of Warwick  
- Ahmad, Bilal  
- Univ. of Warwick  
- Harrison, Robert  
- Univ. of Warwick  
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**TuAT2.5**  
- Tao, Xinlong  
- Univ. of Chinese Acad. of Sciences; Inst. of Automation  
- Yi, Jiangang  
- Chinese Acad. of Sciences  
- Tan, Xiangmin  
- Inst. of Automation  
- Liu, Zhen  
- Inst. of Automation, Chinese Acad. of Sciences  
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Room 3  
**Co-Chair:** Petitti, Antonio  
**Chair:** Li, Xiaoou  
**Center of Res. and Advanced Studies of National Polytechnic Institute (CINVESTAV-IPN)**  
**Abstract:** Enhanced Branch and Bound Approach for Receding Horizon Based Planning, pp. 160-163.  
#### Sponsored by:  
- Jäntschi, Michael  
- Siemens Corp. Tech  
- Nandola, Naresh N.  
- Siemens Corp. Tech

**TuAT3.1**  
- Gonzalez, Jessenia  
- Pontificia Univ. Catolica Del Peru  
- Chavez, Alfredo  
- Pontificia Univ. Catolica Del Peru  
- Paredes, Juan Augusto  
- Pontificia Univ. Catolica Del Peru  
- Saito, Carlos  
- Pontificia Univ. Catolica Del Peru  
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**TuAT3.2**  
A Distributed Map Building Approach for Mobile Robotic Networks, pp. 116-121.  
- Petitti, Antonio  
- National Council of Res  
- Coratelli, Antonio  
- Pol. Di Bari  
- Di Paolo, Donato  
- National Res. Council (CNR)  
- Colella, Roberto  
- Italian National Res. Council (CNR)  
- Milella, Annalisa  
- Italian National Res. Council (CNR)  
- Naso, David  
- Pol. Di Bari  
- Stella, Ettore  
- National Res. Council  
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Regrasping by Fixtureless Fixturing, pp. 122-129.  
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- Massachusetts Inst. of Tech  
- Rodriguez, Alberto  
- Massachusetts Inst. of Tech  
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- Garcia Lopez, Erick  
- CINVESTAV-IPN  
- Yu, Wen  
- CINVESTAV-IPN  
- Li, Xiaou  
- Center of Res. and Advanced Studies of National Polytechnic I  
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- Amar, Julien, Samuel  
- Wakayama Univ  
- Nagase, Kenji  
- Wakayama Univ  
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**Chair:** Loew, Stefan  
**Siemens AG**  
**Abstract:** The Introduction of VR System Development for Nuclear Power Plant in Korea, pp. 152-155.  
#### Sponsored by:  
- Lim, Byungki  
- KHNP

**TuAT4.1**  
- Sarkar, Chayan  
- TCS Res. and Innovation  
- Dey, Soumak  
- TCS Res. and Innovation  
- Agarwal, Marichi  
- TCS Res  
16:30-16:40  

**TuAT4.2**  
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- Govindaraju, Pramod  
- Hamburg Univ. of Tech  
- Acher, Sebastian  
- Hamburg Univ. of Tech  
- Ponsignon, Thomas  
- Infineon Tech. AG  
- Ehm, Hans  
- Infineon Tech. AG  
- Meyer, Matthias  
- Hamburg Univ. of Tech  
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How Object-Oriented Design Principles Enhance the Development of Complex Automation Programs – A Best Practice Paper on How to Develop Service-Interfaces for Process Modules As Defined in VDI/VDE/NAMUR 2658, pp. 156-159.  
- Stutz, Andreas  
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- Maurmaier, Mathias  
- Siemens AG  
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- Siemens AG  
- Maurmaier, Mathias  
- Siemens AG  
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- Jäntschi, Michael  
- Siemens Corp. Tech  
- Nandola, Naresh N.  
- Siemens Corp. Tech  
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Loew, Stefan
Siemens AG

Obradovic, Dragan
Siemens AG


Loew, Stefan
Siemens AG

Obradovic, Dragan
Siemens AG


Marks, Philipp
Univ. of Stuttgart

Müller, Timo
Univ. of Stuttgart

Vögeli, Desirée
Univ. of Stuttgart - Inst. of Industrial Automation and Software Engineering

Jung, Tobias
Univ. of Stuttgart

Jazdi, Nasser
Univ. of Stuttgart - Inst. of Industrial Automation And

Weyrich, Michael
Techn. Univ. Munich


Linnenberg, Tobias
Helmut-Schmidt-Univ. Hamburg

Fay, Alexander
Helmut-Schmidt-Univ. Hamburg

Application of Design Pattern within the Engineering of Agent-Based Control Systems (I), pp. 181-186.

Zawisza, Jacek
Otto-Von-Guericke Univ

Lüder, Arndt
Otto-V.-Guericke Univ

Rosendahl, Ronald
Otto-Von-Guericke Univ


Ryashentseva, Daria
Tech. Univ. Munich

Cruz Salazar, Luis Alberto
Antonio Nariño Univ

Vogel-Heuser, Birgit
Tech. Univ. Munich

Lüder, Arndt
Otto-V.-Guericke Univ

Parameters Identification and Trajectory Optimization of Free-Floating Space Robots, pp. N/A.

Li, Yanan
Tsinghua Univ

Meng, Deshan
Tsinghua Univ

Liu, Houde
Shenzhen Graduate School, Tsinghua Univ

Wang, Xueqian
Tsinghua Univ

Li, Li-na
Harbin Inst. of Tech

Yuan, Bo
Tsinghua Univ
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Kalawoun, Rawan
Inst. Pascal, UMR 6602 - UCA/CNRS/SIGMA
Lengagne, Sebastien
Inst. Pascal CNRS UMR 6602 / Univ. Blaise Pascal / IFMA
Mezouar, Youcef
SIGMA-Clermont

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Yang, Fajun
Nanyang Tech. Univ
Wu, Naqi
Guangdong Univ. of Tech
Su, Rong
Nanyang Tech. Univ
Qiao, Yan
Macau Univ. of Science and Tech

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Bai, Danyu
Shenyang Univ. of Chemical Tech
Liang, Jie
Software Coll. Northeastern Univ
Miao, Yunhui
School of Ec. & Management, Shenyang Univ. of Chemica
Zhang, Zhi-Hai
Tsinghua Univ
### WeAT1
**Room 1**

#### Learning and Adaptive Systems (Regular Session)

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#### Neural Network Adaptive Control of Teleoperation Systems with Uncertainties and Time-Varying Delay

Mohsenzadeh Kebrinia, Parham
Khosravi, Abbas
Nahavandi, Saeid
Najdovski, Zoran
John Hilton, Stephen
Telstra

#### Using Neural Networks for Heuristic Grasp Planning in Random Bin Picking

Spennath, Felix
Fraunhofer Inst. for Manufacturing Engineering and Automation

Pott, Andreas
Univ. of Stuttgart

#### Policy Transfer from Simulations to Real World by Transfer Component Analysis

Matsubara, Takamitsu
Nara Inst. of Science and Tech
Norinaga, Yu
Nara Inst. of Science and Tech
Ozawa, Yuto
Nara Inst. of Science and Tech
Cui, Yunjuan
Nara Inst. of Science and Tech

#### Constraint Estimation and Derivative-Free Recovery for Robot Learning from Demonstrations

Lee, Jonathan
Univ. of California Berkeley
Laskey, Michael
Univ. of California Berkeley
Goldberg, Ken
UC Berkeley

#### Whole Body Human-Robot Collision Detection Using Base-Sensor Neuroadaptive Interaction

Das, Sumit Kumar
Univ. of Louisville
Wijayaningtinghe, Indika
Univ. of Louisville
Saadatzi, Mohammad
Univ. of Louisville
Nasser

#### Towards Automating Precision Irrigation: Deep Learning to Infer Local Soil Moisture Conditions from Synthetic Aerial Agricultural Images

Tseng, David
Univ. of California, Berkeley
Wang, David
Univ. of California, Berkeley
Chen, Carolyn
Univ. of California, Berkeley
Miller, Lauren
Univ. of California, Berkeley
Song, William
Univ. of California, Berkeley
Viers, Joshua
Univ. of California, Merced
Vougioukas, Stavros
UC Davis
Carpin, Stefano
Univ. of California, Merced
Aparicio Ojea, Juan
Siemens
Goldberg, Ken
UC Berkeley

### WeAT2
**Room 2**

#### Agent Based Systems (Regular Session)

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#### Consensus Based Formation Control for Multi-UAV Systems with Time-Varying Delays and Jointly Connected Topologies

Xiong, Tianyi
Univ. of Chinese Acad. of Sciences; Inst. of Automation
Pu, Zhiquian
Univ. of Chinese Acad. of Sciences; Inst. of Automation
Yi, Jianqiang
Chinese Acad. of Sciences
Tao, Xiong
Univ. of Chinese Acad. of Sciences; Inst. of Automation

#### Mutual Localization of UAVs Based on Blinking Ultraviolet Markers and 3D Time-Position Hough Transform

Walter, Viktor
Czech Tech. Univ
Staub, Nicolas
LAAS-CNRS
Saska, Martin
Czech Tech. Univ. in Prague
Franch, Antonio
LAAS-CNRS

#### Factorial Kernel Dynamic Policy Programming for Vinyl Acetate Monomer Plant Model Control

Cui, Yunjuan
Nara Inst. of Science and Tech
Zhu, Lingwei
Nara Inst. of Science and Tech
Fujisaki, Morihito
Yokogawa Electric Corp
Kanokogi, Hiroaki
Yokogawa Electric Corp
Matsubara, Takamitsu
Nara Inst. of Science and Tech

#### On a Class of Multi-Input Laplacian Controllable Graphs

Yang, Ping-Yen
National Chung-Hsing Univ
Hsu, Shun-Pin
National Chung-Hsing Univ

#### Comparative Study of Flexible and Decentralized Agent-Based and Service-Oriented Control Architectures for Production Systems

Ruppert, Steffen
Tech. Univ. München
Walz, Tanja
SEW Eurodrive GmbH
Schönung, Frank
SEW Eurodrive GmbH
Provost, Julien
Tech. Univ. of Munich

#### Performance Evaluation of the DyNa-Q Algorithm for Robot Navigation

Vitolo, Emanuele
Univ. of Zaragoza
San Miguel, Alberto
Univ. of Zaragoza
Civera, Javier
Univ. De Zaragoza
Mahulea, Cristian
Univ. De Zaragoza

### WeAT3
**Room 3**

#### Machine Learning for Cyber-Physical Production Systems (Special Session)

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#### Deep Learning to Infer Local Soil Moisture Conditions from Synthetic Aerial Agricultural Images

Tseng, David
Univ. of California, Berkeley
Wang, David
Univ. of California, Berkeley
Chen, Carolyn
Univ. of California, Berkeley
Miller, Lauren
Univ. of California, Berkeley
Song, William
Univ. of California, Berkeley
Viers, Joshua
Univ. of California, Merced
Vougioukas, Stavros
UC Davis
Carpin, Stefano
Univ. of California, Merced
Aparicio Ojea, Juan
Siemens
Goldberg, Ken
UC Berkeley

Chair: Provost, Julien
Tech. Univ of Munich
Co-Chair: Mahulea, Cristian
Univ. De Zaragoza

Organizer: Fullen, Marta
Fraunhofer IOSB-INA
Organizer: Eiteneuer, Benedikt
OWL Univ. of Applied Sciences
Organizer: Niggemann, Oliver
Fraunhofer Inst
CASE 2018

10:00-10:20 WeAT3.1 Deep Learning Based Efficient Anomaly Detection for Securing Process Control Systems against Injection Attacks (I), pp. N/A.

Potluri, Sasanka Otto-Von-Guericke Univ. Magdeburg
Diedrich, Christian Otto-Von-Guericke-Univ. Magdeburg


Naug, Avisek Vanderbilt Univ
Biswas, Gautam Vanderbilt Univ


Longo, Claudio Santo Univ. of Modena and Reggio Emilia
Fantuzzi, Cesare Univ. Di Modena E Reggio Emilia
Monica, Francesco Univ. of Parma
Manfredotti, Luca Univ. of Modena and Reggio Emilia
Sorge, Marco Univ. of Modena and Reggio Emilia

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Ribeiro, Luis Linkopings Univ
Vogel-Heuser, Birgit Tech. Univ. of Munich

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Tomzik, David Adrian Univ. of Auckland
Xu, Xun Univ. of Auckland

11:40-12:00 WeAT3.6 Design Parameter Optimization of Automated Production Systems, pp. 359-364.

Zou, Minjie Tech. Univ. München
Ocker, Felix Tech. Univ. of Munich
Huang, Edward George Mason Univ
Vogel-Heuser, Birgit Tech. Univ. of Munich
Chen, Chun-Hung George Mason Univ

10:00-10:20 WeAT4.1 Emergency Department Admissions Overflow Modeling by a Clustering of Time Evolving Clinical Diagnoses (I), pp. 365-370.

Soler, Gregory Univ. of Lyon, INSA of Lyon, DISP EA 4570
Bouleux, Guillaume Univ. of Lyon, DISP INSA Lyon
Marcon, Eric Univ. Jean Monnet
Cantais, Aymeric Univ. Hospital (CHU) Saint Etienne


Herazo-Padilla, Nilson Ec. Des Mines De Saint-Etienne
Augusto, Vincent Mines Saint-Etienne
Bongue, Bienvenu CETAf
Xie, Xiaolan Ec. Des Mines De Saint Etienne

10:40-11:00 WeAT4.3 Towards Sensor Failure Detection in Ambient Assisted Living: Sensors Correlations (I), pp. 378-383.

Elhady, Nancy Tech. Univ. of Munich
Provost, Julien Tech. Univ. of Munich

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Laurent, Arnaud LIMOS
Klement, Nathalie LISPEm

11:20-11:40 WeAT4.5 Strategic Territorial Deployment of Hospital Pharmacy Robots Using a Stochastic P-Robust Optimization Approach (I), pp. 390-395.

Franco, Carlos Univ. Del Rosario
Augusto, Vincent Mines Saint-Etienne
Garaix, Magali Hôpital Nord Ouest
Bontemps, Hervé Hôpital Nord Ouest

11:40-12:00 WeAT4.6 Overbooking for Specialty Clinics with Patient No-Shows: A Queueing Approach (I), pp. 396-401.

Fan, Zhenghao Tsinghua Univ
Xie, Xiaolei Tsinghua Univ
Sanchez, Reynerio Univ. of Florida
Zhong, Xiang Univ. of Florida

WeAT5 Room 5 Cyber Physical Systems (Regular Session)
10:00-10:20 WeAT5.1 A Multi-Layered Distributed Cloud Network for Cyber-Physical Energy System, pp. 402-407.

Yang, Lei X‘ian Jiaotong Univ
Guo, Xiaohong X‘ian Jiaotong Univ
Wu, Jiang Xian Jiaotong Univ
Dai, Shihao X‘ian Jiaotong Univ

10:20-10:40 WeAT5.2 Specifying and Synthesizing Energy-Efficient Control System Controllers That Exploit Braking Energy Recuperation, pp. 408-413.

Gritzner, Daniel Leibniz Univ. Hannover
Knöchelmann, Elias Leibniz Univ. Hannover
Greenyer, Joel Leibniz Univ. Hannover
Eggers, Kai Leibniz Univ. Hannover
Tappe, Svenja Leibniz Univ. Hannover
Ortmayer, Tobias Leibniz Univ. Hannover
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<td>Li, Jason Chalmers Univ. of Tech, Berglund, Jonatan Chalmers Univ. of Tech, ...</td>
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<td>Khan, Adnan Chalmers Univ. of Tech, Dahl, Martin Chalmers Univ. of Tech, ...</td>
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<td>An Industry 4.0 Cyber-Physical Framework for Micro Devices Assembly</td>
<td>Cecil, J. Oklahoma State Univ, Albuhamood, Sadiq Oklahoma State Univ, Cecil-Xavier, Aaron ...</td>
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<td>A Virtual Reality Enhanced Cyber Physical Framework to Support Simulation Based Training of Orthopedic Surgical Procedures</td>
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<td>Computation of Homography between a Spherical Image and a Perspective Image</td>
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<td>Shimasaki, Kohei Hiroshima Univ, Okamura, Tomoaki Department of System Cybernetics, Hiroshima Univ, Jiang, Mingjun Hiroshima Univ</td>
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11:00-11:20 WeAT7.4
3D Wireless Power Transfer Based on 3D Printed Electronics, pp. 499-505.
Hou, Tao Delft Univ. of Tech
Song, Yu Delft Univ. of Tech
Elkhuizen, Willemijn Delft Univ. of Tech
Jiang, Jiehui Shanghai Univ
Geraedts, Jo Delft Univ. of Tech
11:20-11:40 WeAT7.5
Tanzini, Matteo Scuola Superiore S.Anna
Jacinto Villegas, Juan Scuola Superiore SantAnna Manuel
Satler, Massimo Scuola Superiore SantAnna
Niccolini, Marta Scuola Superiore SantAnna
Avizzano, Carlo Alberto Scuola Superiore SantAnna
11:40-12:00 WeAT7.6
A Multi-Mode Biomimetic Wall-Climbing Robot, pp. 514-519.
Xu, Jiajun Univ. of Science and Tech. of China
Xu, Linsen Hefei Inst. of Physical Science, Chinese Acad. of Sciences
Liu, Jinfu Univ. of Science and Tech. of China
Li, Xiaohu Hefei Inst. of Physical Science, CAS
Wu, Xuan Hefei Inst. of Physical Science, Chinese Acad. of Science

10:00-10:20 WeAT8.1
Reveliotis, Spiridon Georgia Inst. of Tech
10:20-10:40 WeAT8.2
A Game-Theoretical Design Technique for Multi-Stage Supply Chains under Uncertainty (I), pp. 528-533.
Cavone, Graziana Univ. Degli Studi Di Cagliari
Dotoli, Mariagrazia Pol. Di Bari
Epicoco, Nicola DEE-Pol. Di Bari
Morelli, Davide Pol. Di Bari
Seatzu, Carla Univ. of Cagliari
10:40-11:00 WeAT8.3
Automatic Skill Matching for Production Machines (I), pp. 534-539.
Quiros, Gustavo Siemens Corp. Corp. Tech.

11:00-11:20 WeAT8.4
Basile, Francesco Univ. Di Salerno
Chiacchio, Pasquale Univ. Di Salerno
Di Marino, Emiliano UNISA
11:20-11:40 WeAT8.5
Roselli, Sabino Francesco Chalmers Univ. of Tech
Bengtsson, Kristofer Sekvensa
Akesson, Knut Chalmers Univ. of Tech
11:40-12:00 WeAT8.6
Jia, Qing-Shan Tsinghua Univ
Wu, Junjie Department of Automation, Tsinghua Univ
Xu, Zhanbo Xi'an Jiaotong Univ

Room 8
11:00-11:20 WeAT8.1
Reveliotis, Spiridon Georgia Inst. of Tech
11:20-11:40 WeAT8.2
A Game-Theoretical Design Technique for Multi-Stage Supply Chains under Uncertainty (I), pp. 528-533.
Cavone, Graziana Univ. Degli Studi Di Cagliari
Dotoli, Mariagrazia Pol. Di Bari
Epicoco, Nicola DEE-Pol. Di Bari
Morelli, Davide Pol. Di Bari
Seatzu, Carla Univ. of Cagliari
11:40-12:00 WeAT8.6
Jia, Qing-Shan Tsinghua Univ
Wu, Junjie Department of Automation, Tsinghua Univ
Xu, Zhanbo Xi'an Jiaotong Univ
CASE 2018

WeBT2
Service Robots (Regular Session)
Room 2

Chair: Hashimoto, Manabu
Graduate School of Computer and Cognitive Sciences, Chukyo University

Co-Chair: Berenstein, Ron
UC Berkeley

13:30-13:50
WeBT2.1
Torii, Takuya
Chukyo Univ
Hashimoto, Manabu
Graduate School of Computer and Cognitive Sciences, Chukyo University

13:50-14:10
WeBT2.2
Real-Time Shape Recognition of a Deformable Link by Using Self-Organizing Map, pp. 586-591.
Xu, Shan
Nankai Univ
Li, Gaofeng
NanKai Univ
Song, Dezhen
Texas A&M Univ
Sun, Lei
Nankai Univ
Liu, Jingtai
Nankai Univ

14:10-14:30
WeBT2.3
Berenstein, Ron
UC Berkeley
Wallach, Averell
UC Berkeley
Elimbi Moudio, Marie Pelagie
UC Berkeley
CueIrar, Peter
Univ. of California, Berkeley
Goldberg, Ken
UC Berkeley

14:30-14:50
WeBT2.4
A Learning Method for a Daily Assistive Robot for Opening and Closing Doors Based on Simple Instructions, pp. 599-605.
Nagahama, Kotoro
Shinshu Univ
Takeshita, Keisuke
The Univ. of Tokyo
Yaguchi, Hiroaki
The Univ. of Tokyo
Yamazaki, Kimitoshi
Shinshu Univ
Yamamoto, Takashi
Toyota Motor Corp
Inaba, Masayuki
The Univ. of Tokyo

WeBT3
Computer Vision for Manufacturing (Regular Session)
Room 3

Chair: Yamazaki, Kimitoshi
Shinshu Univ
Co-Chair: Hodapp, Jan
Daimler AG

13:30-13:50
WeBT3.1
Gripping Positions Selection for Unfolding a Rectangular Cloth Product, pp. 606-611.
Yamazaki, Kimitoshi
Shinshu Univ

13:50-14:10
WeBT3.2
Surface Defect Saliency of Magnetic Tileface Defects, pp. 612-617.
Huang, Yibin
Inst. of Automation, Chinese Acad. of Sciences
Qiu, Congying
Columbia Univ
Yuan, Kui
Chinese Acad. of Science
Guo, Yue
Chinese Acad. of Sciences

14:10-14:30
WeBT3.3
Vision Based Deformation and Wrinkle Detection for Semi-Finished Fiber Products on Curved Surfaces, pp. 618-623.
Gupta, Kashish
Univ. of British Columbia
Körber, Marian
German Aerospace Center
Krebs, Florian
German Aerospace Center
Najarian, Homayoun
Univ. of British Columbia

14:30-14:50
WeBT3.4
Training CNNs from Synthetic Data for Part Handling in Industrial Environments, pp. 624-629.
Andulkar, Mayur
Chair of Automation Tech
Hodapp, Jan
Daimler AG
Reichling, Thorsten
Daimler AG
Reichenbach, Matthias
Daimler AG
Berger, Ulrich
Brandenburg Univ. of Tech.

WeBT4
Industry Session: Manufacturing Automation (Regular Session)
Room 4

Chair: Schütz, Daniel
GEFASOFT GmbH
Co-Chair: Smieschek, Manfred

13:30-13:40
WeBT4.1
Hujo, Dominik
GEFASOFT GmbH
Schütz, Daniel
GEFASOFT GmbH
Brunner, Benjamin
Gefasoft GmbH

13:40-14:00
WeBT4.2
Integration of Collaborative Robot in a Hard Steel Industrial Environment, pp. 634-637.
Menges, Baptiste
Lab. Lorrain De Recherche En Informatique Et Ses Applicat
Sarre, Michaël
Compagny
Henaff, Patrick
Univ. of Lorraine, CNRS, INRIA

13:50-14:00
WeBT4.3
Simulation-Based Performance Assessment of Tool Requalification Strategies in Wafer Fabs, pp. 638-641.
Kopp, Denny
Univ. of Hagen
Moench, Lars
Univ. of Hagen
Pabst, Detlef
Glbalfoundries
Stehli, Marcel
Globalfoundries

14:00-14:10
WeBT4.4
Smieschek, Manfred
RWTH Aachen
Hinrichs, Timo
RWTH Aachen
Stollenwerk, André
RWTH Aachen
Kowalewski, Stefan
RWTH Aachen, Embedded Software Lab
Preuß, Rüdiger
KHS, Dortmund

14:10-14:20
WeBT4.5
Stark, Katharina
ABB Forschungszentrum
### WeBT4.6

- **Goldschmidt, Thomas**
- **Doppelhamer, Jens**
- **Bihani, Prema**
- **Goltz, Dieter**
- **Doppelhamer, Jens**
- **Bihani, Prema**
- **Goltz, Dieter**

**14:20-14:30**

### WeBT4.7
**Enhancing Data Driven Models with Knowledge from Engineering Models in Manufacturing**, pp. 653-656.

- **Auris, Felix**
- **Fisch, Jessica**
- **Brandl, Michael**
- **Süß, Sebastian**
- **Soubar, Abdelhameed**
- **Diedrich, Christian**

**14:30-14:40**

### WeBT5.1

- **Galvanauskas, Vytautas**
- **Simulis, Rimvydas**
- **Levišauskas, Donatas**
- **Butkus, Mantas**
- **Urniezius, Renaldas**

**13:30-13:35**

### WeBT5.2
**Uniform Parallel Machine Scheduling with Dedicated Machines, Job Splitting, and Setup Resources**, pp. 661-663.

- **Kim, Hyun-Jung**
- **Lee, Jun-Ho**

**13:35-13:40**

### WeBT5.3

- **Lüder, Arndt**
- **Pauly, Johanna-Lisa**
- **Wimmer, Manuel**

**13:40-13:45**

### WeBT5.4

- **Cho, Seong Yun**

**13:45-13:50**

### WeBT5.5

- **Lüder, Arndt**
- **Pauly, Johanna-Lisa**
- **Riniker, Felix**
- **Biffi, Stefan**

**13:50-13:55**

### WeBT6.1
**A New Calibration Method of Line Scan Camera for High-Precision Two-Dimensional Measurement**, pp. 678-683.

- **Zhang, Jiabin**
- **Shen, Fei**
- **Zhang, Feng**
- **Su, Hu**

**13:30-13:50**

### WeBT6.2
**A System Architecture for Constraint-Based Robotic Assembly with CAD Information**, pp. 690-696.

- **Arbo, Mathias**
- **Pane, Yudha Prawira**
- **Decré, Wilm**

**14:10-14:30**

### WeBT6.4

- **Zhao, Hankun**
- **Cui, Andrew**
- **Cullen, Schuyler**
- **Laskey, Michael**

**13:30-13:50**
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<th>Authors</th>
</tr>
</thead>
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<tr>
<td>13:30-13:50</td>
<td>WeBT7.1</td>
<td>An Approach of Service Modeling for the Demand-Driven Implementation of Human-Robot-Interaction in Manufacturing (I)</td>
<td>Delang, Kathleen, Todtermuschke, Marcel, Putz, Matthias</td>
</tr>
<tr>
<td>13:50-14:10</td>
<td>WeBT7.2</td>
<td>Application of Generative Adversarial Networks for Intelligent Fault Diagnosis (I)</td>
<td>Cao, Sican, Wen, Long, Li, Xinyu, Gao, Liang</td>
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<tr>
<td>14:10-14:30</td>
<td>WeBT7.3</td>
<td>Equipment Health Assessment and Fault-Early Warning Algorithm Based on Improved SVDD (I)</td>
<td>Zhang, Lianlian, Qiao, Fei, Wang, Junkai</td>
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<tr>
<td>14:30-14:50</td>
<td>WeBT7.4</td>
<td>Multiagent Manufacturing Scheduling: An Updated State of the Art Review (I)</td>
<td>Fazlirad, Alireza, Brennan, Robert</td>
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<tr>
<td>13:30-13:50</td>
<td>WeBT8.1</td>
<td>A Cloud Computing Architecture for Eco Route Planning of Heavy Duty Vehicles (I)</td>
<td>Fanti, Maria Pia, Mangini, Agostino Marcello, Rotunno, Giuliana, Fiume, Giambattista</td>
</tr>
<tr>
<td>13:50-14:10</td>
<td>WeBT8.2</td>
<td>Control Architecture and Transport Coordination for Autonomous Logistics Modules in Flexible Automated Material Flow Systems (I)</td>
<td>Lieberoth-Leden, Christian, Fischer, Juliane, Fottner, Johannes</td>
</tr>
<tr>
<td>14:10-14:30</td>
<td>WeBT8.3</td>
<td>A New Cluster-Based Approach for the Vehicle Routing Problem with Time Windows (I)</td>
<td>Abbatecola, Lorenzo, Fanti, Maria Pia, Pedroncelli, Giovanni, Ukovich, Walter</td>
</tr>
<tr>
<td>15:00-15:20</td>
<td>WeCT1.1</td>
<td>A Distributed Algorithm for Sensor Fault Detection (I)</td>
<td>Zhang, Ziyou, Zhao, Qianchuan, Yang, Wen</td>
</tr>
<tr>
<td>15:20-15:40</td>
<td>WeCT1.2</td>
<td>Fluctuation Reduction of Wind Power with Battery Energy Storage Systems (I)</td>
<td>Yang, Zhen, Xia, Li, Guan, Xiaohong</td>
</tr>
<tr>
<td>15:40-16:00</td>
<td>WeCT1.3</td>
<td>A New Particle Swarm Optimization Algorithm for Clustering (I)</td>
<td>Xu, Xiangping, Li, Jun</td>
</tr>
<tr>
<td>15:00-15:20</td>
<td>WeCT2.1</td>
<td>Soft Sensors for Estimating Laundry Weight in Household Heat Pump Tumble Dryers (I)</td>
<td>Zambonin, Giuliano, Altinier, Fabio, Corso, Lorenzo, Sessolo, Mattia</td>
</tr>
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**WeBT8**

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<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
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<td>WeCT2.2</td>
<td>AI-Based Methods (Regular Session)</td>
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**WeCT2**
WeCT2.2 Depth-Based Object Detection Using Hierarchical Fragment Matching Method, pp. 780-785.

Haghighi, Reza - Macquarie Univ
Rasouli, Mahdi - National Univ. of Singapore
Ahmed, Marriam - National Univ. of Singapore
Tan, Kim Pong - KTC-SHIPYARD Tech
Mamun, Abdullah Al - National Univ. of Singapore
Chew, Chee Meng - National Univ. of Singapore

WeCT2.3 A Multiscale Concept Drift Detection Method for Learning from Data Streams, pp. 786-790.

Wang, XueSong - Tongji Univ
Kang, Qi - Tongji Univ
Zhou, MengChu - New Jersey Inst. of Tech
Yao, Siya - Tongji Univ

WeCT3 Advanced Metaheuristics for Smart Shop Scheduling I (Special Session)

Chair: Wang, Ling - Tsinghua Univ
Co-Chair: Gao, Liang - Huazhong Univ. of Sci. & Tech
Organizer: Wang, Ling - Tsinghua Univ
Organizer: Gao, Liang - Huazhong Univ. of Sci. & Tech

WeCT3.1 A Combined Model for Short-Term Load Forecasting Based on Bird Swarm Algorithm (!), pp. 791-796.

Cao, Zhengcai - Beijing Univ. of Chemical Tech
Liu, Lu - Beijing Univ. of Chemical Tech
Zhou, Meng - Beijing Univ. of Chemical Tech

WeCT3.2 An Improved MOEA/D for Order Scheduling Problem in Automated Warehouse (!), pp. 797-802.

Cao, Zhengcai - Beijing Univ. of Chemical Tech
Liu, Kaiken - Beijing Univ. of Chemical Tech
Hu, Biao - Beijing Univ. of Chemical Tech

WeCT3.3 A Self-Braking Symbiotic Organisms Search Algorithm for Bi-Objective Reentrant Hybrid Flow Shop Scheduling Problem (!), pp. 803-808.

Cao, Zhengcai - Beijing Univ. of Chemical Tech
Gong, Sikai - Beijing Univ. of Chemical Tech
Zhou, Meng - Beijing Univ. of Chemical Tech
Liu, Kaiken - Beijing Univ. of Chemical Tech

WeCT4 Calibration and Identification (Regular Session)

Chair: Acerbi, Federica - Univ. of Pavia

WeCT4.1 Accuracy and Robustness against Covariate Shift of Water Chiller Models, pp. 809-816.

Acerbi, Federica - Univ. of Pavia
De Nicolao, Giuseppe - Univ. of Pavia, Italy
Obiltschin, Josef - Infineon Tech
Richter, Patrick - Infineon Tech
De Luca, Cristina - Infineon Tech. Austria AG

WeCT5 Sensor Networks (Regular Session)

Chair: Ding, Yu - Texas A&M Univ
Co-Chair: Zhou, Chenhao - National Univ. of Singapore

WeCT5.1 Design of an Efficient Communication Architecture for Cyber-Physical Production Systems, pp. 829-835.

Kaestner, Florian - Ruhr-Univ. Bochum
Kuschnnerus, Dirk - KROHNE Innovation GmbH
Spiegel, Christoph - KROHNE Innovation GmbH
JanBen, Benedikt - Ruhr-Univ. Bochum
Huebner, Michael - Ruhr-Univ. Bochum

WeCT5.2 A Mixed Integer Programming Based Recursive Variance Reduction Method for Reliability Evaluation of Linear Sensor Systems, pp. 836-842.

Vijayaraghavan, Vishnu - Texas A&M Univ
Kianfar, Kiavash - Texas A&M Univ
Ding, Yu - Texas A&M Univ
Parsaei, Hamid - Texas A&M Univ. at Qatar

WeCT5.3 Single Direction Traffic Rule for GRID System - an Innovative Automated Material Handling System, pp. 843-848.

Zhou, Chenhao - National Univ. of Singapore
Li, Haobin - National Univ. of Singapore
Lee, Loo Hay - National Univ. of Singapore
Chew, Ek Peng - National Univ. of Singapore

WeCT6 Discrete Event Optimization (Regular Session)

Chair: Lennartson, Bengt - Chalmers Univ. of Tech
Co-Chair: Fabian, Martin - Department of Electrical Engineering

WeCT6.1 Compositional Optimization of Discrete Event Systems, pp. 849-856.

Hagebring, Fredrik - Chalmers Univ. of Tech
Lennartson, Bengt - Chalmers Univ. of Tech

WeCT6.2
**WeDT3**

**Advanced Metaheuristics for Smart Shop Scheduling II (Special Session)**

**Chair:** Wang, Ling  
**Tsinghua Univ.**

**Co-Chair:** Gao, Liang  
**Huaizhong Univ. of Sci. & Tech.**

**Organizer:** Wang, Ling  
**Tsinghua Univ.**

**Organizer:** Gao, Liang  
**Huaizhong Univ. of Sci. & Tech.**

16:20-16:40  
**WeDT3.1**

**Many-Objective Flexible Job Shop Scheduling Problem: A Novel Imperialist Competitive Algorithm (I),** pp. N/A.

**Li, Ming**  
**Wuhan Univ. of Tech.**

**Lei, Deming**  
**Wuhan Univ. of Tech.**

16:40-17:00  
**WeDT3.2**

**A Grouping Genetic Algorithm for the Intercell Scheduling Problem (I),** pp. 956-961.

**Wang, Shuai**  
**Beijing Inst. of Tech.**

**Du, Shaofeng**  
**Inner Mongolia First Machinery Group Corp.**

**Ma, Tao**  
**Inner Mongolia First Machinery Group Corp.**

**Li, Dongni**  
**Beijing Inst. of Tech.**

17:00-17:20  
**WeDT3.3**

**An Improved NSGA-II Based Algorithm for Economical Hot Rolling Batch Scheduling under Time-Sensitive Electricity Prices (I),** pp. 962-967.

**Tan, Mao**  
**Xiangtan Univ.**

**Li, Miqing**  
**Univ. of Birmingham**

**Wang, Ling**  
**Tsinghua Univ.**

17:20-17:40  
**WeDT3.4**

**An Improved Differential Evolution Algorithm for Solving a Distributed Flexible Job Shop Scheduling Problem (I),** pp. 968-973.

**Wu, Xuli**  
**Univ. of Science and Tech. Beijing**

**Liu, Xiaojing**  
**Univ. of Science and Tech. Beijing**

17:40-18:00  
**WeDT3.5**

**Hybridizing Tabu Search with Mathematical Programming for Solving a Single Row Layout Problem (I),** pp. 974-980.

**Yu, Meng**  
**Beijing Univ. of Posts and Telecommunications**

**Zuo, Xingquan**  
**Beijing Univ. of Posts and Telecommunications**

**Zhao, Xinchao**  
**Beijing Univ. of Posts and Telecommunications**

**Wang, Chunlu**  
**Beijing Univ. of Posts and Telecommunications**

**WeDT4**

**Robots and Autonomous Vehicles (Regular Session)**

**Room 4**

**Chair:** Hidaka, Koichi  
**Tokyo Denki Univ.**

16:20-16:40  
**WeDT4.1**

**Towards Time-Optimal Trajectory Planning for Pick-And-Transport Operation with a Mobile Manipulator,** pp. 981-987.

**Thakar, Shantanu**  
**Univ. of Southern California**

**Fang, Liwei**  
**Univ. of Southern California**

**Shah, Brual C.**  
**Univ. of Maryland, Coll. Park**

**Gupta, Sanyanda K.**  
**Univ. of Southern California**

16:40-17:00  
**WeDT4.2**

**Pneumatic Shape-Shifting Fingers to Reorient and Grasp,** pp. 988-993.

**Chavan-Dafle, Nikhil**  
**Massachusetts Inst. of Tech.**

**Lee, Kyubin**  
**Massachusetts Inst. of Tech.**

**Rodriguez, Alberto**  
**Massachusetts Inst. of Tech.**

17:00-17:20  
**WeDT4.3**

**Hybrid Exploration Method Based on a Sensor-Based and Frontier Based Exploration Algorithms for Autonomous Map Generation on Autonomous Transport Vehicle,** pp. 994-999.

**Hidaka, Koichi**  
**Tokyo Denki Univ.**

**Kameyama, Naoki**  
**Tokyo Denki Univ.**

17:20-17:40  
**WeDT4.4**


**Liu, Xiangdong**  
**Zhejiang Univ.**

**Chen, Rui**  
**Zhejiang Univ.**

**Xue, Zhenteng**  
**Zhejiang Univ.**

**Lei, Yong**  
**Zhejiang Univ.**

**Tian, Jinzhang**  
**Changjiang Survey, Planning, Design and Res. Co., Ltd.**

**WeDT5**

**Intelligent and Flexible Manufacturing (Regular Session)**

**Room 5**

**Chair:** Chen, Chao-Chun  
**National Cheng Kung Univ.**

**Co-Chair:** Scholz, Steffen  
**KIT**

16:20-16:40  
**WeDT5.1**

**Smart Modular Reconfigurable Fully-Digital Manufacturing System with a Knowledge-Based Framework: Example of a Fabrication of Microfluidic Chips,** pp. 1012-1017.

**Scholz, Steffen**  
**KIT**

**Elkaseer, Ahmed**  
**KIT**

**Müller, Tobias**  
**Karlsruhe Inst. of Tech.**

**Gengenbach, Ulrich**  
**Karlsruhe Inst. of Tech.**

**Hagenmeyer, Veit**  
**Karlsruhe Inst. of Tech. (KIT)**

16:40-17:00  
**WeDT5.2**

**An Automated Liquid Manipulation by Using a Ferrofluid-Based Robotic Sheet,** pp. N/A.

**Tone, Tadayuki**  
**Univ. of Tsukuba**

**Suzuki, Kenji**  
**Univ. of Tsukuba**

**Wang, Chunlu**  
**Beijing Univ. of Posts and Telecommunications**

17:00-17:20  
**WeDT5.3**
## CASE 2018

**Map-Reduce-Style Job Offloading Using Historical Manufacturing Behavior for Edge Devices in Smart Factory**, pp. N/A.

Chen, Chao-Chun
National Cheng Kung Univ

Su, Wei-Tsung
Aletheia Univ

Hung, Min-Hsiung
Chinese Culture Univ

Lin, Zhong-Hui
IBM

17:20-17:40 WeDT5.4

**Novel Formulation and Resolution of Job-Shop Scheduling Problems**, pp. N/A.

Yan, Bing
Univ. of Connecticut

Bragin, Mikhail
Univ. of Connecticut

Luh, Peter
Univ. of Connecticut

17:40-18:00 WeDT5.5

**A Cloud-Based Pluggable Manufacturing Service Scheme for Smart Factory (I)**, pp. 1040-1045.

Liu, Yu-Yang
National Cheng Kung Univ

Hung, Min-Hsiung
Chinese Culture Univ

Lin, Yu-Chuan
National Cheng Kung Univ

Chen, Chao-Chun
National Cheng Kung Univ

Gao, Wei-Lun
National Cheng Kung Univ

Cheng, Fan-Tien
National Cheng Kung Univ

18:20-18:40 WeDT6

**Optimization and Supervision of Production Systems** (Regular Session)

Chair: Ju, Feng
Arizona State Univ

16:20-16:40 WeDT6.1

**On-Line Tool Wear Monitoring Via Sparse Coding Based on DCT and WPD (I)**, pp. 1046-1051.

Yu, Xiaolong
Univ. of Science and Tech. of China

Wang, Rongchuan
Chinese Acad. of Sciences

Shi, Yungao
Inst. of Advanced Manufacturing Tech. HefeiInstitutes

Zhu, Kunpeng
Chinese Acad. of Sciences

16:40-17:00 WeDT6.2

**Condition-Based Real-Time Production Control for Smart Manufacturing Systems (I)**, pp. 1052-1057.

Wang, Feifan
Arizona State Univ

Lu, Yan
National Inst. of Tech. and Standards

Ju, Feng
Arizona State Univ

17:00-17:20 WeDT6.3


Zhu, Hongwei
Tongji Univ

Lu, Zhiqiang
Tongji Univ

Hu, Xinming
Tongji Univ

17:20-17:40 WeDT6.4

**Resolving Inconsistencies Optimally in the Model-Based Development of Production Systems**, pp. 1064-1070.

Zou, Minjie
Tech. Univ. München

Lu, Boyang
Tech. Univ. Munich

Vogel-Heuser, Birgit
Tech. Univ. Munich

17:40-18:00 WeDT6.5


Balta, Efe
Univ. of Michigan

Tilbury, Dawn
Univ. of Michigan

Barton, Kira
Univ. of Michigan at Ann Arbor


Chair: Fay, Alexander
Helmut-Schmidt-Univ. Hamburg

Co-Chair: Hildebrandt,Constantin
Helmut-Schmidt-Univ

Organizer: Fay, Alexander
Helmut-Schmidt-Univ. Hamburg

16:20-16:40 WeDT7.1


Hildebrandt, Constantin
Helmut-Schmidt-Univ

Törsleff, Sebastian
Helmut-Schmidt-Univ

Caesar, Birte
Helmut-Schmidt-Univ. Inst. of Automation Tech

Fay, Alexander
Helmut-Schmidt-Univ. Hamburg

16:40-17:00 WeDT7.2

**Model-Based Documentation of Context Uncertainty for Collaborative Cyber-Physical Systems - an Approach and Application to an Industry Automation Case Example (I)**, pp. 1087-1092.

Bandyszak, Torsten
Paluno - the Ruhr Inst. for Software Tech. Univ

Daun, Marian
Paluno - the Ruhr Inst. for Software Tech. Univ

Tenbergen, Bastian
State Univ. of New York at Oswego

Weyer, Thorsten
Paluno - the Ruhr Inst. for Software Tech. Univ

17:00-17:20 WeDT7.3

**Online-Monitoring Autonomous Transport Robots with an R-Valued Temporal Logic (I)**, pp. 1093-1098.

Lorenz, Felix
Tech. Univ. Berlin

Schlingloff, Holger
Humboldt Univ

17:20-17:40 WeDT7.4


Busch, Kiana
Karlsruhe Inst. of Tech. (KIT)

Werle, Dominik
Karlsruhe Inst. of Tech. (KIT)

Löper, Martin
Karlsruhe Inst. of Tech. (KIT)

Heinrich, Robert
Karlsruhe Inst. of Tech. (KIT)

Reussner, Ralf
Karlsruhe Inst. of Tech. (KIT)

Vogel-Heuser, Birgit
Tech. Univ. Munich
## Technical Program for Thursday August 23, 2018
### ThAT1  Room 1
**Automation in Life Sciences and Health-Care Systems**  (Regular Session)

**Chair:** Tan, U-Xuan  
**Co-Chair:** Fleischer, Heidi

**10:00-10:20**  
**ThAT1.1**  
*Development of a Vision-Based Feature Extraction for Food Intake Estimation for a Robotic Assistive Eating Device*, pp. 1105-1109.  
Solis, Jorge  
Karlsson, Christoffer  
Lindborg, Ann-Louise  
Takeda, Yukio  
Zhang, Cheng

**10:20-10:40**  
**ThAT1.2**  
Schedler, Martina  
Fleischer, Heidi  
Bandomir, Jenny  
Junginger, Steffen  
Thurow, Kerstin

**10:40-11:00**  
**ThAT1.3**  
*Semi-Automatic Snore Detection in Polysomnography Based on Hierarchical Clustering*, pp. 1116-1122.  
Goh, Chun Fan  
Samuelsson, Laura  
Hall, Martica  
Seet, Gim Lee, Gerald  
Shimada, Kenji

**11:00-11:20**  
**ThAT1.4**  
*Ultrasound±Guided Involuntary Motion Compensation of Kidney Stones in Percutaneous Nephrolithotomy Surgery*, pp. 1123-1129.  
Paranawithana, Ishara  
Li, Hsieh-Yu  
Yang, Liangjing  
Lim, Terence Sey Kiat  
Ng, Foo Cheong  
Tan, U-Xuan

**11:20-11:40**  
**ThAT1.5**  
*Reducing COPD Readmissions: A Causal Bayesian Network Model*, pp. N/A.  
Lee, Sujee  
Wang, Sijie  
Bain, Philip  
Baker, Christine  
Kundinger, Tammy  
Sommers, Craig  
Li, Jingshan

**11:40-12:00**  
**ThAT1.6**  
*Bottleneck Analysis to Improve Multidisciplinary Rounding Process in Intensive Care Units at Mayo Clinic*, pp. N/A.  
Lee, Hyo Kyung  
Dong, Yue  
Picking, Brian  
Gajic, Ogncjen  
Li, Jingshan

## ThAT2  Room 2
**Formal Methods in Robotics and Automation**  (Regular Session)

**Chair:** Wang, Hongpeng  
**Co-Chair:** Cha, Suhyun

**10:00-10:20**  
**ThAT2.1**  
*Model for a Rigid, 3D Mechanism Inspired by Pop-Up Origami, and Its Application to a Re-Configurable, Physical Environment*, pp. 1146-1151.  
Bernard, Alexander  
Araujo de Aguiar, Carlos  
Green, Keith Evan

**10:20-10:40**  
**ThAT2.2**  
*Modeling and Validation of Free Road with Geometric Parameter Representation for Wheeled Mobile Robots*, pp. 1152-1157.  
Li, Pengpeng  
Wang, Hongpeng  
Mingyue, Zhu  
Liu, Jingtaiz

**11:00-11:20**  
**ThAT2.3**  
*Constructing Dependability Analysis Models of Reconfigurable Production Systems*, pp. 1158-1163.  
Marussy, Kristóf  
Majzik, Istvan

**11:20-11:40**  
**ThAT2.4**  
*Extension of the Plant Feature Approach Introducing Temporal Relations*, pp. 1164-1169.  
Jordan, Claudius V.  
Cuevza Herrero, Judit  
Provost, Julien

**11:40-12:00**  
**ThAT2.5**  
*Achieving Delta Description of the Control Software for an Automated Production System Evolution*, pp. N/A.  
Cha, Suhyun  
Weigl, Alexander  
Ulbrich, Mattias  
Beckett, Bernhard  
Vogel-Heuser, Birgit

## ThAT3  Room 3
**Factory Automation**  (Regular Session)

**Chair:** Jin, Ran  
**Co-Chair:** Katti, Badarinath

**11:40-12:00**  
**ThAT3.**  
*Mapping Chronicles to a K-Dimensional Euclidean Space Via Random Projections*, pp. 1177-1182.  
Sahuguelde, Alexandre  
Ferarghi, Soheib  
Le Corronc, Euriell  
Lelann, Marie-Véronique

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CASE 2018
CASE 2018

10:00-10:20 ThAT3.1
Hao, Xinru
Department of Industrial Engineering, Tsinghua Univ.
Beijing
Qi, Mingyao
Graduate School at Shenzhen, Tsinghua Univ.

10:20-10:40 ThAT3.2
Katti, Badarinath
Tech. Univ. of Kaiserslautern
Plociennik, Christiane
German Res. Center for Artificial Intelligence, Kaiserslautern
Schweitzer, Michael
SAP SE, Walldorf
Ruskowski, Martin
Deutsches Forschungszentrum Für Künstliche Intelligenz

10:40-11:00 ThAT3.3
Thönnessen, David
RWTH Aachen Univ
Reinker, Niklas
RWTH Aachen Univ
Rakel, Stefan
RWTH Aachen Univ
Svetlakov, Andrei
RWTH Aachen, Embedded Software Lab
Kowalewski, Stefan
RWTH Aachen, Embedded Software Lab

11:00-11:20 ThAT3.4
Data Fusion Pipelines for Autonomous Smart Manufacturing, pp. 1203-1208.
Chen, Xiaoyu
Virginia Tech
Jin, Ran
Virginia Tech

11:20-11:40 ThAT3.5
Interaction-Effect Search Algorithm for the KSA Scheme, pp. N/A.
Lin, Chin-Yi
National Cheng Kung Univ
Hsieh, Yu-Ming
National Cheng Kung Univ. Inst. of Manufacturing Infor
Cheng, Fan-Tien
National Cheng Kung Univ
Yang, Yu-Ru
National Cheng Kung Univ. Inst. of Manufacturing Infor
Adnan, Muhammad
National Cheng Kung Univ. Inst. of Manufacturing Infor

11:40-12:00 ThAT3.6
Message-Oriented Middleware for Industrial Production Systems, pp. 1217-1223.
Sommer, Philipp
Univ. of Stuttgart
Schellroth, Florian
Univ. of Stuttgart
Fischer, Marc Timo
Univ. of Stuttgart
Schlechtendahl, Jan
Bosch Rexroth AG

Zhang, Xu
Univ. of Erlangen-Nuremberg
Scholz, Michael
Friedrich-Alexander-Univ. Erlangen-Nuremberg
Reitelshöfer, Sebastian
Friedrich-Alexander-Univ. of Erlangen-Nuremberg
Franke, Jörg
Univ. of Erlangen-Nuremberg

10:20-10:40 ThAT4.1

10:40-11:00 ThAT4.2
Integrated Ordering and Pricing Policy for Perishable Products with Inventory Inaccuracy, pp. 1230-1236.
Zhang, Yajun
Southeast Univ
Wang, Zheng
Southeast Univ

11:00-11:20 ThAT4.3
Forest-Based Tabu Search to the Split-Delivery Capacitated Arc-Routing Problem, pp. 1237-1242.
Lai, Qidong
Sun Yat-Sen Univ
Zichen, Zhang
Sun Yat-Sen Univ
Xin, Jin
Huazhong Univ. of Science and Tech
Qin, Hu
Huazhong Univ. of Science and Tech

11:20-12:00 ThAT4.4
Sustainable Mobility and User Preferences by Crowdsourcing Data: The Open Agora Project, pp. 1243-1248.
Edoardo, Fadda
Pol. Di Torino
Mama, Dario
Pol. Di Torino
Perboli, Guido
Pol. Di Torino
Valerio, Vallesio
Pol. Di Torino

11:40-12:00 ThAT4.5
Danielczuk, Michael
UC Berkeley
Mahler, Jeffrey
Univ. of California, Berkeley
Correa, Christopher
Univ. of California at Berkeley
Goldberg, Ken
UC Berkeley

11:40-12:00 ThAT4.6
Balancing Trade-Offs between Utilization and Work-In-Process Inventory Levels in Flow Shop Production (I), pp. 1257-1262.
Li, Wei
Univ. of Kentucky
Zhang, Zhi-Hai
Tsinghua Univ

10:00-10:20 ThAT5.1
Robot Model Learning with Gaussian Process Mixture Model, pp. 1263-1268.
Park, Sooho
Carnegie Mellon Univ
Huang, Yu
Carnegie Mellon Univ
Goh, Chun Fan
Carnegie Mellon Univ
Shimada, Kenji
Carnegie Mellon Univ

10:20-10:40 ThAT5.2
Neumann, Michael
Uni Bremen
Nottensteiner, Korbinian
German Aerospace Center (DLR)

ThAT5
Model Learning for Control (Regular Session)
Room 5
Chair: Nuchkrua, Thanana
Chung Cheng Univ
Co-Chair: Tan, Wei Chian
Nanyang Tech. Univ. Register Global Tech. Centre Pte Ltd

10:00-10:20 ThAT5.1
Robot Model Learning with Gaussian Process Mixture Model, pp. 1263-1268.
Park, Sooho
Carnegie Mellon Univ
Huang, Yu
Carnegie Mellon Univ
Goh, Chun Fan
Carnegie Mellon Univ
Shimada, Kenji
Carnegie Mellon Univ

10:40-11:00 ThAT5.2
Balancing Trade-Offs between Utilization and Work-In-Process Inventory Levels in Flow Shop Production (II), pp. 1277-1282.
Li, Wei
Univ. of Kentucky
Zhang, Zhi-Hai
Tsinghua Univ

11:00-11:20 ThAT5.3
Sustainable Mobility and User Preferences by Crowdsourcing Data: The Open Agora Project, pp. 1243-1248.
Edoardo, Fadda
Pol. Di Torino
Mama, Dario
Pol. Di Torino
Perboli, Guido
Pol. Di Torino
Valerio, Vallesio
Pol. Di Torino

11:20-12:00 ThAT5.4
Danielczuk, Michael
UC Berkeley
Mahler, Jeffrey
Univ. of California, Berkeley
Correa, Christopher
Univ. of California at Berkeley
Goldberg, Ken
UC Berkeley

11:40-12:00 ThAT5.5
Balancing Trade-Offs between Utilization and Work-In-Process Inventory Levels in Flow Shop Production (I), pp. 1257-1262.
Li, Wei
Univ. of Kentucky
Zhang, Zhi-Hai
Tsinghua Univ

ThAT4
Logistics (Regular Session)
Room 4
Chair: Wang, Zheng
Southeast Univ
Co-Chair: Edoardo, Fadda
Pol. Di Torino

10:00-10:20 ThAT4.1
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<th>Authors</th>
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<tr>
<td>10:40-11:00</td>
<td>ThAT5.3</td>
<td>Learning Traffic Behaviors by Extracting Vehicle Trajectories from Online Video Streams</td>
<td>Ren, Xinhe, Wang, David, Laskey, Michael, Goldberg, Ken</td>
<td>Univ. of California, Berkeley, Univ. of California, Berkeley, Univ. of California, Berkeley, UC Berkeley</td>
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<td>11:00-11:20</td>
<td>ThAT5.4</td>
<td>Learning-Based Adaptive Robust Control of Manipulated Pneumatic Artificial Muscle Driven by H2-Based Metal Hydride</td>
<td>Li, Kelin, Nuchkrua, Thanana, Boonto</td>
<td>Huazhong Univ. of Science and Tech, National Chung Cheng Univ, KMUTT</td>
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<td>10:00-10:20</td>
<td>ThAT6.1</td>
<td>Energy Consumption Optimization in Two-Machine Bernoulli Serial Lines (I)</td>
<td>Yan, Chao-Bo, Cheng, Xingru, Gao, Feng, Guan, Xiaohong</td>
<td>Xi’an Jiaotong Univ, Xi’an Jiaotong Univ, Xi’an Jiaotong Univ, Xi’an Jiaotong Univ, Xi’an Jiaotong Univ</td>
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<td>10:20-10:40</td>
<td>ThAT6.2</td>
<td>A Sequential Bayesian Partitioning Approach for Online Steady State Detection of Multivariate System (I)</td>
<td>Wu, Jianguo</td>
<td>Peking Univ</td>
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<td>10:40-11:00</td>
<td>ThAT6.3</td>
<td>Simulation-Predictive Control for Manufacturing Systems (I)</td>
<td>Kossyk, Ingo, Marton, Zoltan-Csaba, K使得y, Giulia, Ju, Feng</td>
<td>Cape Analytics GmbH, German Aerospace Center (DLR), Arizona State Univ, Arizona State Univ</td>
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**ThBT1**

Room 1

**Human-Robot Interaction (Regular Session)**

Chair: Aschemann, Harald
Co-Chair: Müller, Florian

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<td>13:50-14:10</td>
<td>ThBT1.2</td>
<td>Enabling Fixtureless Assemblies in Human-Robot Collaborative Workcells by Reducing Uncertainty in the Part Pose Estimate</td>
<td>Kumbia, Nithyananda B, Marvel, Jeremy</td>
<td>Univ. of Southern California, National Inst. of Standards and Tech</td>
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<td>14:10-14:30</td>
<td>ThBT1.3</td>
<td>Full-Dynamics-Based Bilateral Teleoperation of Hydraulic Robotic Manipulators</td>
<td>Lampinen, Santeri, Koivumäki, Mättäli, Jouni</td>
<td>Tampere Univ. of Tech, Tampere Univ. of Tech, Tampere Univ. of Tech, Tampere Univ. of Tech</td>
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<td>14:30-14:50</td>
<td>ThBT1.4</td>
<td>A Cloud-Based Robust Semaphore Mirroring System for Social Robots</td>
<td>Tian, Nan, Kuo, Benjamin, Ren, Xinhe, Yu, Michael, Zhang, Robert Zhe, Huang, Bill, Goldberg, Ken, Sojoudi, Somayeh</td>
<td>Univ. of California, Berkeley, Apple Inc, Univ. of California, Berkeley, Univ. of California Los Angeles, CloudMinds Tech, UC Berkeley, UC Berkeley, UC Berkeley</td>
</tr>
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**ThBT1.5**

Safe and Efficient Human-Robot Collaboration Part II, Optimal Generalized Human-In-The-Loop Real-Time Motion Generation, pp. N/A.
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<td>13:50-14:10</td>
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<td>A Real-Time Container Architecture for Dependable Distributed Embedded Applications (I), pp. 1367-1374.</td>
<td>Telschig, Kilian Siemens AG Schoenberger, Dr. Andreas Siemens AG Knapp, Alexander Univ. Augsburg</td>
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<td>14:00-14:30</td>
<td>ThBT2.2</td>
<td></td>
<td>Applying Self-Adaptation to Automate the Management of Online Documentation of Telecom Systems (II), pp. 1375-1380.</td>
<td>Danny, Weyns KU Leuven Morgan, Ericsson Linnaeus Univ Welf, Lowe SoftWerk Frans, Freijedstredt Ericsson Johan, Thomaditsson Sigma Tech Anna-Karin, Hultt Sigma Tech</td>
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<td>14:30-14:50</td>
<td>ThBT2.4</td>
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<td>Efficient Implementation of Task Automation to Support Multidisciplinary Engineering of CPS (I), pp. 1388-1393.</td>
<td>Maier, Rupert Siemens AG, Corp. Tech Unverdorben, Stephan Siemens AG Gepp, Michael Siemens AG</td>
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<td>14:30-14:50</td>
<td>ThBT3.4</td>
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<td>Dex-Net As a Service (DNaaS): A Cloud-Based Robust Robot Grasp Planning System, pp. 1420-1427.</td>
<td>Li, Pusong UC Berkeley DeRose, William UC Berkeley Mahler, Jeffrey Univ. of California, Berkeley Aparicio Ojua, Juan Siemens Goldberg, Ken UC Berkeley Tanwani, Ajay Kumar UC Berkeley</td>
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<td>13:30-13:50</td>
<td>ThBT4</td>
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<td>Innovative Tools and Methods for Automated, Accurate and Complex Tasks at Micro-Nanoscales I (Special Session)</td>
<td>Chair: Lutz, Philippe Femto-St - Umr Cnrs 6174 - Ufc/ensmm/utbm Co-Chair: Pope, Dan Univ. of Louisville Organizer: Lutz, Philippe Femto-St - Umr Cnrs 6174 - Ufc/ensmm/utbm Organizer: Pope, Dan Univ. of Louisville Organizer: Cappelleri, David Purdue Univ Organizer: Clévy, Cédric Franche-Comté Univ</td>
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### ThBT4.3
**Analysis of an Integrated 4-DoF Parallel Wrist for Dexterous Gripping (I)**, pp. 1448-1453.

- Behague, Florent
- Courjal, Nadège
- Lutz, Philippe

### ThBT4.4
**Precision Grasp Control with a Pneumatic Gripper and a Novel Fingertip Force Sensor (I)**

- Haouas, Wissem
- Dahmouche, Redwan
- Laurent, Guillaume J.

### ThBT4.5

- Banerjee, Ashis
- Rajasekaran, Keshav
- Parsa, Behnoosh

### ThBT5
**Industrial Robot (Regular Session)**

- Co-Chair: Barreto, Juan Pablo

#### ThBT5.1

- Malhan, Rishi
- Kabir, Ariyan M
- Shembekar, Aniruddha
- Shah, Brual C.
- Centea, Timotei
- Gupta, Satyandra K.

#### ThBT5.2

- Mitschke, Marcel
- Uchiyama, Naoki
- Sawodny, Oliver

#### ThBT5.3
**Automation of Train Cab Front Cleaning with a Robot Manipulator**, pp. N/A.

- Moura, Joao
- Mccoll, William Alexander
- Taykaldirianan, Gerard
- Tomiyama, Tetsuo
- Erden, Mustafa Suphi

### ThBT6
**Real-Time Modeling, Monitoring, and Control of Advanced Manufacturing Systems II (Special Session)**

- Chair: Kang, Yunyi
- Co-Chair: Wu, Jianguo

#### ThBT6.1

- Kang, Yunyi
- Yan, Hao
- Ju, Feng

#### ThBT6.2
**Transients of Synchronous Serial Production Lines with Non-Exponential Reliability Machines (I)**, pp. 1507-1512.

- Yang, Mengzhuo
- Zhang, Liang

#### ThBT6.3
**Data-Driven Downtime Bottleneck Detection in Open Flow Lines (I)**, pp. 1513-1518.

- Zhang, Mengyi
- Matta, Andrea

#### ThBT6.4

- Inui, Masatomo
- Ebin, Yutaro
- Maezaki, Tomohiro
- Zhou, Libo

#### ThBT6.5
**An Approach to Automatically Assign Mechatronic Components to an Existing or Identified Classification**, pp. 1525-1529.

- Süs, Sebastian
- Auris, Felix
- Diedrich, Christian

### ThCT1
**Innovative Engineering Methods (Special Session)**

- Chair: Drath, Rainer
- Co-Chair: Hua, Yingbing

#### ThCT1.4
**An Approach to Automatically Assign Mechatronic Components to an Existing or Identified Classification**, pp. 1525-1529.

- Süs, Sebastian
- Auris, Felix
- Diedrich, Christian
### ThCT1.1
**Modeling and Exchange of IO-Link Configurations with AutomationML (I)**, pp. 1530-1535.
- Drath, Rainer
  - Univ. of Applied Sciences Pforzheim
- Rentschler, Markus
  - Balluff GmbH

**16:00-16:20**
**Model-Driven Consistency Preservation in AutomationML (I)**, pp. 1536-1541.
- Ananieva, Sofia
  - FZI Res. Center of Information Tech
- Burger, Erik
  - Karlsruhe Inst. of Tech
- Stier, Christian
  - FZI Res. Center for Information Tech

### ThCT2.1
**Concept Learning in AutomationML with Formal Semantics and Inductive Logic Programming (I)**, pp. 1542-1547.
- Hua, Yingbing
  - Karlsruhe Inst. of Tech. (KIT)
- Hein, Björn
  - Karlsruhe Inst. of Tech. (KIT)

### ThCT2.2
- Härle, Christian
  - Pforzheim Univ
- Barth, Mike
  - HS Pforzheim
- Fay, Alexander
  - Helmut-Schmidt-Univ. Hamburg

### ThCT3.1
**Systematic Design Method of ControllerUsing Discrete Fuzzy PI Control and Particle Swarm Optimization**, pp. 1581-1586.
- Jongmin, Cheon
  - Korea Electrotechnology Res. Inst

### ThCT3.2
- Lu, Zedi
  - Zhejiang Univ
- Peng, Tao
  - Zhejiang Univ
- Chen, Wei
  - Zhejiang Univ

### ThCT3.3
- Fei, Zicheng
  - Huazhong Univ. of Science and Tech
- Li, Shiqi
  - Huazhong Univ. of Science and Tech
- Chang, Qing
  - Stony Brook Univ
- Wang, Junfeng
  - Huazhong Univ. of Science and Tech
- Huang, Yaqin
  - Huazhong Univ. of Science and Tech

### ThCT4.1
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- Bafumba Liseli, Joël
  - Univ. Bourgogne Franche-Comté
- Dahmouche, Redwan
  - Univ. De Franche Comté
16:00-16:20  ThCT4.2
Automated Electric-Field-Based Nanowire Characterization, Manipulation, and Assembly (I), pp. 1612-1617.
Kumar, Pardeep  FEMTO-ST Inst. Univ. Bourgogne Franche-Comte
Seon, Jean-Antoine  Aalto Univ
Gauthier, Michael  FEMTO-ST Inst

16:20-16:40  ThCT4.3
A Virtual Capture Framework for Assembly Tasks, pp. 1618-1623.
Yu, Kaiyan  Binghamton Univ
Yi, Jingang  Rutgers Univ
Shan, Jerry  Rutgers Univ

16:40-17:00  ThCT4.4
An Integrated Workflow to Automatically Fabricate Flexible Electronics by Functional Printing and SMT Component Mounting, pp. 1624-1629.
Gengenbach, Ulrich  Karlsruhe Inst. of Tech
Ungerer, Martin  Karlsruhe Inst. of Tech. (KIT)
Aytac, Emre  Karlsruhe Inst. of Tech
Koker, Liane  Karlsruhe Inst. of Tech. (KIT)
Stiller, Peter  Karlsruhe Inst. of Tech
Reichert, Klaus-Martin  Karlsruhe Inst. of Tech
Hagenmeyer, Veit  Karlsruhe Inst. of Tech. (KIT)