2018 21st International Conference on Information Fusion (FUSION 2018)

Cambridge, United Kingdom
10-13 July 2018

Pages 1-634

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

Program

2018 21st International Conference on Information Fusion (FUSION)

1a - Tracking Algorithms

- Cubature and Quadrature Based Continuous-discrete Filters for Maneuvering Target Tracking

  Abhinoy Kumar Singh (Indian Institute of Technology, India), Kundan Kumar (Indian Institute of Technology Patna, India), Swati (Indian Institute of Technology Patna & Indian Institute of Technology Patna, India), Shovan Bhaumik (Indian Institute of Technology Patna, India) 1

- Three-dimensional Tracking with Angle Measurements Without Observer Maneuver

  Christian Musso (ONERA, France), Patrick Fabiani (ISAE-SUPAERO, France) 9

- Single-Point Bistatic Track Initialization Using Doppler in 3D

  David F Crouse (Naval Research Laboratory, USA) 16

- Multitarget Tracking Using Over-the-Horizon Radar

  Leilei Guo (Xi'an Jiaotong University, P.R. China), Jian Lan (Xi'an Jiaotong University, P.R. China), X. Rong Li (University of New Orleans, USA) 24

- A Novel Variable Structure Multi-model Tracking Algorithm Based on Error-ambiguity Decomposition

  Han Shen-Tu (Hangzhou Dianzi University, P.R. China), Ji-an Luo (Hangzhou Dianzi University, P.R. China), Xue Anke (Hangzhou Dianzi University, P.R. China), Peng Dongliang (Hangzhou Dianzi University, P.R. China), Yunfei Guo (Hangzhou Dianzi University, P.R. China) 32

1b - Gaussian Processes

- Ensemble Kalman Filtering for Online Gaussian Process Regression and Learning

  Danil Kuzin (University of Sheffield, United Kingdom (Great Britain)), Le Yang (Jiangnan University & School of Internet of Things (IoT) Engineering, P.R. China), Olga Isupova (The University of Oxford, United Kingdom (Great Britain)), Lyudmila Mihaylova (University of Sheffield, United Kingdom (Great Britain)) 39

- Sparse Structure Enabled Grid Spectral Mixture Kernel for Temporal Gaussian Process Regression

  Feng Yin (The Chinese University of Hong Kong (Shenzhen), P.R. China), Xinwei HE (The Chinese University of Hong Kong, Shenzhen, P.R. China), Lishuo Pan (The Chinese University of Hong Kong, Shenzhen, P.R. China), Tianshi Chen (Linköping University, Sweden), Zhi-Quan Luo (University of Minnesota, USA), Sergios Theodoridis (University of Athens, Greece) 47

- A Gaussian Process Regression for Natural Gas Consumption Prediction Based on Time Series Data

  Oussama Laib (University of Badji Mokhtar Annaba & LabGED, Algeria), Mohamed Tarek Khadir (University of Badji Mokhtar Annaba, Algeria), Lyudmila Mihaylova (University of Sheffield, United Kingdom (Great Britain)) 55

- A Gaussian Process Regression Approach for Fusion of Remote Sensing Images for Oil Spill Segmentation

  Fodio Longman (University of Sheffield, United Kingdom (Great Britain)), Lyudmila Mihaylova (University of Sheffield, United Kingdom (Great Britain)), Le Yang (Jiangnan University & School of Internet of Things (IoT) Engineering, P.R. China) 62

1c - SS: Advances in Distributed Kalman Filtering and Fusion 1

- A Review of Forty Years of Distributed Estimation

  Chee-Yee Chong (Independent Researcher, USA), Kuochu Chang (George Mason University, USA), Shozo Mori (Systems & Technology Research, USA) 70

- Distributed Kalman Filter for A Class of Nonlinear Uncertain Systems: An Extended State Method

  Xingkang He (University of Chinese Academy of Sciences & Academy of Mathematics and Systems Science, P.R. China), Xiaocheng Zhang (Academy of Mathematics and Systems Science, Chinese Academy of Sciences, P.R. China), Wenchao Xue (Academy of Mathematics and Systems Science, Chinese Academy of Sciences, P.R. China), Haitao Fang (Academy of Mathematics and Systems Science, Chinese Academy of Sciences, P.R. China) 78

- Event-triggered Consensus Bernoulli Filtering

  Lin Gao (University of Electronic Science and Technology of China, P.R. China), Giorgio Battistelli (Università di Firenze, Italy), Luigi Chisci (Università di Firenze, Italy), Ping Wei (University of Electronic Science and Technology of China, Chengdu, P.R. China) 84

- Distributed Observations in Meteorological Ensemble Data Assimilation and Forecasting

  Elias V Holm (European Centre for Medium-Range Weather Forecasts, United Kingdom (Great

1d - SS - Advanced Nonlinear Filters 1

1e - SS - Lower Bounds for Parameter Estimation and Beyond

1f - Point Process Methods

Jinran Wang (Shanghai Jiao Tong university, P.R. China), Zhongliang Jing (Shanghai Jiao Tong University, P.R. China), Jin Cheng (Beijing Electro-mechanical Engineering Institute, P.R. China), Peng Dong (Shanghai Jiao Tong University, P.R. China) 219

1g - Modelling, Simulation and Evaluation

- Identifying Interactions for Information Fusion System Design Using Machine Learning Techniques

  Ali Raz (Purdue University, USA), Paul Wood (Purdue University, USA), Linas Mockus (Purdue University, USA), James Llinas (University at Buffalo, USA), Dan DeLaurentis (Purdue University, USA) 226

- Application of A New Distribution to High Grazing Angle Sea-Clutter

  Liu Heng-yan (Naval Aeronautical and Astronautical University, P.R. China), Cui Yaqi (Naval Aeronautical and Astronautically University, P.R. China), Wei Xiong (Research Institute of Information Fusion, P.R. China), Song Jie (Naval Aviation University, P.R. China) 234

- Motion Artefacts Modelling in the Application of a Wireless Electrocardiogram

  Waltenegus Dargie (Technische Universität Dresden, Germany) 239

- On Effect of Information Loss on Fuser Quality and Utility

  Qiang Liu (Oak Ridge National Laboratory, USA), Nageswara Rao (Oak Ridge National Laboratory, USA) 245

- State Estimation with a Heading Constraint

  Zhuanhua Zhang (Harbin Institute of Technology, P.R. China), Keyi Li (Harbin Institute of Technology, P.R. China), Gongjian Zhou (Harbin Institute of Technology, P.R. China) 253

1h - Extended Object/ Group Tracking

- 3D Extended Object Tracking Using Recursive Gaussian Processes

  Murat Kumru (Middle East Technical University, Turkey), Emre Ozkan (Middle East Technical University, Turkey) 259

- Extended Object Tracking and Shape Classification

  Barkın Tuncer (Middle East Technical University, Turkey), Murat Kumru (Middle East Technical University, Turkey), Emre Ozkan (Middle East Technical University, Turkey), Aydin Alatan (Middle East Technical University, Turkey) 267

- A Gaussian Process Convolution Particle Filter for Multiple Extended Objects Tracking with

Non-Regular Shapes

Waqas Aftab (The University of Sheffield, United Kingdom (Great Britain)), Allan De Freitas (University of Pretoria, South Africa), Lyudmila Mihaylova (University of Sheffield, United Kingdom (Great Britain)), Mahnaz Arvaneh (The University of Sheffield, United Kingdom (Great Britain)) 275

- Maximum Likelihood Extended Target Detection for Tsunami Warning Using Ocean Surface Radar

Tetsutaro Yamada (Mitsubishi Electric Corporation and University of Tsukuba, Japan), Ishikawa Hiroaki (Mitsubishi Electric Corporation, Japan), Tomoyuki Koyanagi (Mitsubishi Electric Corporation, Japan), Arioka Toshihiko (Mitsubishi Electric Corporation, Japan), Yasushi Obata (Mitsubishi Electric Corporation, Japan), Hiroshi Kameda (Mitsubishi Electric Corporation, Japan) 283

1i - Track Before Detect

- Non-Bayesian Track-Before-Detect Using Cauchy-Schwarz Divergence-Based Information Fusion

Amirali Khodadadian Gostar (RMIT University, Australia), Tharindu Rathnayake (RMIT University, Australia), Ruwan Tennakoon (RMIT University, Australia), Alireza Bab-Hadiashar (RMIT University, Australia), Reza Hoseinnezhad (RMIT University, Australia) 289

- Track-before-detect Strategies for Multiple-PRF Radar System with Range and Doppler Ambiguities

Ming Wen (University of Electronic Science and Technology of China, P.R. China), Wei Yi (University of Electronic Science and Technology of China, P.R. China), Yaru Wang (University of Electronic Science and Technology of China, P.R. China) 295

- Track-Before-Detect Technique in Mixed Coordinates

Liangliang Wang (Harbin Institute of Technology, P.R. China), Gongjian Zhou (Harbin Institute of Technology, P.R. China), Thia Kirubarajan (McMaster University, Canada) 302

- A Method for Resolving the Merit Function Expansion of Dynamic Programming TBD

Wujun Li (University of Electronic Science and Technology of China, P.R. China), Wei Yi (University of Electronic Science and Technology of China, P.R. China), Jinghe Wang (University of Electronic Science and Technology of China, P.R. China) 308

- Detection of Multiple Targets in an Image

Balakumar Balasingam (University of Windsor, Canada) 315

2a - Localisation 1

- Convex Combination for Source Localization Using Received Signal Strength Measurements

  Qi Wang (Xi'an Jiaotong University, P.R. China), Zhansheng Duan (Xi'an Jiaotong University & College of Electronics and Information Engineering, P.R. China), X. Rong Li (University of New Orleans, USA), Uwe D. Hanebeck (Karlsruhe Institute of Technology & Karlsruhe Institute of Technology (KIT), Germany) 323

- A Crowd-sensing Procrustes-Based Method for Indoor Positioning in a Common Frame of Reference

  Alex Pereira da Silva (CEA, France), Sylvain Leirens (CEA, France) 331

- GNSS Ambiguity Resolution by Adaptive Mixture Kalman Filter

  Karl OE Berntorp (Mitsubishi Electric Research Labs, USA), Avishai Weiss (Mitsubishi Electric Research Labs, USA), Stefano Di Cairano (Mitsubishi Electric Research Labs, USA) 338

- An Ensemble Kalman Filter for Feature-Based SLAM with Unknown Associations

  Fabian Sigges (University of Goettingen, Germany), Christoph Rauterberg (Georg-August-University of Goettingen, Germany), Marcus Baum (University of Passau, Germany), Uwe D. Hanebeck (Karlsruhe Institute of Technology & Karlsruhe Institute of Technology (KIT), Germany) 346

2b - SS: Multi-sensor Data Fusion for Navigation and Localisation 1

- Passive Multi-Target Tracking Using the Adaptive Birth Intensity PHD Filter

  Christopher Berry (Lockheed Martin Advanced Technology Laboratories, USA), Donald Bucci (Lockheed Martin Advanced Technology Laboratories, USA), Samuel Schmidt (Lockheed Martin Advanced Technology Laboratories, USA) 353

- Robust Bayesian Filtering Using Bayesian Model Averaging and Restricted Variational Bayes

  Syed Safwan Khalid (COMSATS Institute of Information Technology, Pakistan), Naveed ur Rehman (COMSATS Institute of Information Technology, Pakistan), Shafayat Abrar (Habib University, Karachi, Pakistan, Pakistan), Lyudmila Mihaylova (University of Sheffield, United Kingdom (Great Britain)) 361

- A Novel Robust Rauch-Tung-Striebel Smoother Based on Slash and Generalized Hyperbolic Skew Student's T-Distributions

2c - SS: Situational Understanding Through Equivocal Sources

2d - Deep Learning 1

- Deep Generative Acoustic Models for Real-Time Sonar Systems

  Thomas Powers (University of Washington, USA), David W Krout (University of Washington & Electrical Engineering, USA) 429

- Open-Book Testing and Multi-Label Deep Generative Models

  Rastin Rastgoufard (University of New Orleans, USA), AbdulRahman Alsamman (University of New Orleans, USA) 433

- Bottle Detection in the Wild Using Low-Altitude Unmanned Aerial Vehicles

  Jinwang Wang (Wuhan University, P.R. China), Wei Guo (Wuhan University, P.R. China), Ting Pan (Wuhan University, P.R. China), Huai Yu (Wuhan University, P.R. China), Lin Duan (Wuhan University, P.R. China), Wen Yang (School of Electronic Information, Wuhan University, P.R. China) 439

- A Priori Independence for Deep Generative Models

  Rastin Rastgoufard (University of New Orleans, USA), AbdulRahman Alsamman (University of New Orleans, USA) 445

2e - SS: Forty Years of Multiple Hypothesis Tracking 1

- Forty Years of Multiple Hypothesis Tracking - A Review of Key Developments

  Chee-Yee Chong (Independent Researcher, USA), Shozo Mori (Systems & Technology Research, USA), Donald Reid (Independent Consultant, USA) 452

- Seeing the Forest Through the Trees: Multiple-Hypothesis Tracking and Graph-Based Tracking Extensions

  Stefano Coraluppi (Systems & Technology Research, USA) 460

- Radar Resource Management for Multiple Hypothesis Tracking

  Joao Cabrera (BAE Systems, USA), Lucas Finn (BAE Systems, USA), Shane Fairbrother (BAE Systems, USA) 467

- Track Initiation for Maritime Radar Tracking with and Without Prior Information

  Erik F Wilthil (Norwegian University of Science and Technology, Norway), Edmund Brekke (NTNU, Norway), Oskar Asplin (Norwegian University of Science and Technology, Norway) 472

- An MHT Approach to Multi-Sensor Passive Sonar Tracking

  Stefano Coraluppi (Systems & Technology Research, USA), Craig Carthel (Systems & Technology Research, USA), Andy Coon (STR, USA) 480

2f - Applications of Information Fusion

- Probabilistic Fusion Framework for Collaborative Robots 3D Mapping

  Yufeng Yue (Nanyang Technological University, Singapore), Namal Senarathne (Nanyang Technological University, Singapore), Chule Yang (Nanyang Technological University, Singapore), Jun Zhang (Nanyang Technological University, Singapore), Mingxing Wen (Nanyang Technological University, Singapore), Danwei Wang (Nanyang Technological Univeristy, Singapore, Singapore) 488

- A Do It Yourself Mobile Communications Signal Based Passive Radar

  Baris Satar (Ankara University, Turkey), Yetkin Ersoy (STM Inc., Turkey), Gokhan Soysal (Ankara University, Turkey), Murat Efe (Ankara University, Turkey) 492

- Real-Time Creation of a Target Situation Picture with the HENSOLDT Passive Radar System

  Dietrich Fraenken (Hensoldt Sensors, Germany), Oliver Zeeb (HENSOLDT, Germany) 500

- On Defense Strategies for Recursive System of Systems Using Aggregated Correlations

  Nageswara Rao (Oak Ridge National Laboratory, USA), Chris Yu Tak Ma (Hang Seng Management College, Hong Kong), Fei He (Texas A&M University-Kingsville, USA) 507

- Subjective Logic Based Score Level Fusion: Combining Faces and Fingerprints

  Pankaj Shivdayal Wasnik (Norwegian University of Science and Technology, Norway), Raghavendra Ramachandra (Norwegian University of Science and Technology (NTNU), Norway), Kiran B. Raja (Norwegian University of Science and Technology (NTNU), Norway), Christoph Busch (NTNU - Gjøvik, Norway) 515

2g - Sonar, Radar, Video Tracking

- Prioritizing Goals in Cognitive Sonar: Tracking Multiple Targets

  Jill Nelson (George Mason University, USA), Negar Etemadyrad (George Mason University, USA) 521

- Multiple Target Tracking in Automotive FCM Radar by Multi-Bernoulli Filter with Elimination of Other Targets

  Koichiro Suzuki (Denso IT Laboratory, INC., Japan), Chiharu Yamano (Denso IT Laboratory,

INC., Japan), Norikazu Ikoma (Nippon Institute of Technology, Japan) 527

- Comparing Visual Tracker Fusion on Thermal Image Sequences

  Sebastian Thome (Fraunhofer-IOSB, Germany), Norbert Scherer-Negenborn (Fraunhofer IOSB, Germany), Michael Arens (Fraunhofer IOSB, Germany) 535

- Robust Multiple Human Targets Tracking for Through-wall Imaging Radar

  Guohao Chen (University Of Electronic Science And Technology Of China, P.R. China), Guolong Cui (University of Electronic Science and Technology of China (UESTC), P.R. China), Lingjiang Kong (University of Electronic Science and Technology of China, P.R. China), Shisheng Guo (University Of Electronic Science And Technology Of China, P.R. China), Lingxiao Cao (University of Electronic Science and Technology of China, P.R. China), Yong Jia (Chengdu University of Technology, P.R. China) 542

- Situation Awareness in Telecommunication Networks Using Topic Modeling

  Tove Helldin (University of Skövde, Sweden), H. Joe Steinhauer (School of Informatics, University of Skövde, Sweden), Alexander Karlsson (University of Skövde, Sweden), Gunnar Mathiason (University of Skövde, Sweden) 549

2h - SS: Big Data Fusion and Analytics

- A Sensor Fault-Resilient Framework for Predictive Emission Monitoring Systems

  Daniele Angelosante (ABB Corporate Research Center, Switzerland), Marco Guerriero (ABB Corporate Research Center in Baden, Switzerland), Gregorio Ciarlo (ABB, Italy), Nunzio Bonavita (ABB, Italy) 557

- Learning Capsules for Vehicle Logo Recognition

  Ruilong Chen (University of Sheffield, United Kingdom (Great Britain)), Md Asif Jalal (University of Sheffield, United Kingdom (Great Britain)), Lyudmila Mihaylova (University of Sheffield, United Kingdom (Great Britain)), Roger Moore (University of Sheffield, United Kingdom (Great Britain)) 565

- American Sign Language Posture Understanding with Deep Neural Networks

  Md Asif Jalal (University of Sheffield, United Kingdom (Great Britain)), Ruilong Chen (University of Sheffield, United Kingdom (Great Britain)), Roger Moore (University of Sheffield, United Kingdom (Great Britain)), Lyudmila Mihaylova (University of Sheffield, United Kingdom (Great Britain)) 573

- The Neighbor Course Distribution Method with Gaussian Mixture Models for AIS-based Vessel Trajectory Prediction

Bjørnar R. Dalsnes (Norwegian University of Science and Technology (NTNU), Norway), Simen Hexeberg (Norwegian University of Science and Technology (NTNU), Norway), Andreas L Flåten (Norwegian University of Science and Technology, Norway), Bjørn-Olav Holtung Eriksen (Norwegian University of Science and Technology (NTNU), Norway), Edmund Brekke (NTNU, Norway) 580

- A Parallel Platform for Fusion of Heterogeneous Stream Data

  Shan Zhang (Syracuse University, USA), Jielong Xu (Syracuse University, USA), Sora Choi (Syracuse University, USA), Jian Tang (Syracuse University, USA), Pramod Varshney (Syracuse University, USA), Zhenhua Chen (Syracuse University, USA) 588

2i - Intent, Behaviour, Swarm Modelling

- Learning Correlation Graph and Anomalous Employee Behavior for Insider Threat Detection

  Pratibha Pratibha (Nanyang Technological University, Singapore), Junshan Wang (Nanyang Technological University, Singapore), Saurabh Aggarwal (Nanyang Technological University, Singapore), Feng Ji (Nanyang Technological University, Singapore), Wee Peng Tay (Nanyang Technological University, Singapore) 595

- Model-based Heterogeneous Optimal Space Constellation Design

  Katherine Mott (Virginia Tech, USA), Jonathan Black (Virginia Tech, USA) 602

- Entropy-Based Intention Change Detection with a Multi-Hypotheses Filter

  Florian Particke (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany), Christian Hofmann (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany), Markus Hiller (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany), Henrik Bey (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany), Christian Feist (AUDI AG, Germany), Jörn Thielecke (Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany) 610

- A Meta-tracking Approach for Predicting the Driver or Passenger Intent

  Bashar I. Ahmad (University of Cambridge, United Kingdom (Great Britain)), Pat Langdon (Cambridge University, United Kingdom (Great Britain)), Simon Godsill (University of Cambridge, United Kingdom (Great Britain)) 617

- Prediction of Rendezvous in Maritime Situational Awareness

  Murat Uney (CMRE, Italy, United Kingdom (Great Britain)), Leonardo Maria Millefiori (NATO STO CMRE, Italy), Paolo Braca (CMRE, Italy) 622

3a - Dempster-Schafer Theory

- Extending Deng Entropy to the Open World in the Evidence Theory

Yongchuan Tang (Northwestern Polytechnical University, P.R. China), DeYun Zhou (Northwestern Polytechnical University, P.R. China), Felix Chan (, Hong Kong) 629

- Provenance Across Evidence Combination in Theory of Belief Functions

  Pawel Kowalski (University of Bristol, United Kingdom (Great Britain)), Trevor Martin (University of Bristol, United Kingdom (Great Britain)) 635

- Efficient Computing of Dempster-Shafer Theoretic Conditionals for Big Hard/Soft Data Fusion

  Joshua Bassey (CREDIT Center, PVAMU, USA), Xiangfang Li (Prairie View A&M University, USA), Lijun Qian (Prairie View A&M University, USA), Alex Aved (AFRL, USA), Timothy Kroecker (Air Force Research Lab, USA) 643

- Magnitude Design of FIR Evidence Filters with Prescribed Transition Rolloff Using Bisection and ICMEE

  Dinghan Hu (Hangzhou Dianzi University, P.R. China), Xiaoping Lai (Institute of Information and Control, Hangzhou Dianzi University, P.R. China) 651

- Uncertain Pattern Classification Based on Evidence Fusion in Different Domains

  Zhunga Liu (Northwestern Polytechnical University, P.R. China), Linqing Huang (Northwestern Polytechnical University, P.R. China), Quan Pan (Northwestern Polytechnical University, P.R. China), Kuang Zhou (Northwestern Polytechnical University, P.R. China) 657

3b - SS: Evaluation of Techniques for Uncertainty Representation

- Application of URREF Criteria to Assess Knowledge Representation in Cyber Threat Models

  Valentina Dragos (ONERA, France), Juergen Ziegler (IABG mbH, Germany), Johan P de Villiers (University of Pretoria & CSIR, South Africa) 664

- Experimental Comparison of Ad Hoc Methods for Classification of Maritime Vessels Based on Real-life AIS Data

  Max Krueger (Hochschule Furtwangen, Germany) 672

- Towards the Rational Development and Evaluation of Complex Fusion Systems: a URREF-Driven Approach

  Gregor Pavlin (Thales Research and Technology, The Netherlands), Anne-Laure Jousselme (NATO STO CMRE, Italy), Johan P de Villiers (University of Pretoria & CSIR, South Africa), Paulo C.G. Costa (George Mason University, USA), Patrick de Oude (Thales Research & Technology Netherlands, The Netherlands) 679

3c - SS: Directional Estimation

3d - Machine Learning

of Technology, USA), Austin Dill (Georgia Institute of Technology, USA) 745

- Machine Learning: Defining Worldwide Cyclone Labels for Training

  Christina Bonfanti (University of Colorado Boulder & CIRES, USA), Jebb Stewart (Colorado State University Fort Collins, USA), Lidia Trailovic (University of Colorado at Boulder & CIRES, NOAA, USA), Mark Govett (NOAA Boulder, USA) 753

- A Multi-User Multi-Task Model for Stress Monitoring from Wearable Sensors

  Oumayma Sakri (CEA-LETI, MINATEC, France), Christelle Godin (CEA-Leti Minatec, France), Gaël Vila (CEA, LETI, France), Etienne Labyt (CEA-LETI, Minatec, France), Sylvie Charbonnier (Gipsa-lab INPG-CNRS, France), Aurélie Campagne (University Grenoble Alpes & CNRS, LPNC UMR, France) 761

- PDAFAI with a Neural Network Acoustic Emulator

  David W Krout (University of Washington & Electrical Engineering, USA) 767

3e - SS: Advances in Motion Estimation using Inertial Sensors

- Robust Gyroscope-Aided Camera Self-Calibration

  Santiago Cortes Reina (Aalto University, Finland), Arno Solin (Aalto University, Finland), Juho Kannala (Aalto University, Finland) 772

- Motion Artifact Reduction in Ambulatory Electrocardiography Using Inertial Measurement Units and Kalman Filtering

  Roland Hostettler (Aalto University, Finland), Tuomas Lumikari (Helsinki University Central Hospital, Finland), Lauri Palva (Aalto University, Finland), Tuomo Nieminen (South Karelia Central Hospital and Helsinki University Central Hospital, Finland), Simo Särkkä (Aalto University, Finland) 780

- Inertial Sensor Array Processing with Motion Models

  Johan Wahlström (KTH Royal Institute of Technology, Sweden), Isaac Skog (KTH Royal Institute of Technology, Sweden), Peter Händel (Royal Institute of Technology, Sweden) 788

- Magnetic Odometry - A Model-Based Approach Using A Sensor Array

  Isaac Skog (LiU, Sweden), Gustaf Hendeby (Linköping University, Sweden), Fredrik Gustafsson (Linköping University, Sweden) 794

- A Method for Lower Back Motion Assessment Using Wearable 6D Inertial Sensors

  Marco Molnar (Technische Universität Berlin, Germany), Manon Kok (Delft University of

Technology, The Netherlands), Tilman Engel (University of Potsdam, Germany), Hannes Kaplick (University of Potsdam, Germany), Frank Mayer (Universität Potsdam, Germany), Thomas Seel (Technische Universität Berlin, Germany) 799

3f - SS: AI Enabled Fusion for Federated Environments

- A Policy System for Control of Data Fusion Processes and Derived Data

  Elisa Bertino (Purdue University, USA), Dinesh Verma (IBM, USA), Seraphin B Calo (IBM Research, USA) 807

- Distributed Machine Learning in Coalition Environments: Overview of Techniques

  Tiffany Tuor (Imperial College London, United Kingdom (Great Britain)), Shiqiang Wang (IBM T. J. Watson Research Center, USA), Kin K. Leung (Imperial College, United Kingdom (Great Britain)), Kevin S Chan (US Army Research Laboratory, USA) 814

- Learning and Reasoning in Complex Coalition Information Environments: a Critical Analysis

  Federico Cerutti (Cardiff University, United Kingdom (Great Britain)), Moustafa Alzantot (University of California Los Angeles, USA), Tianwei Xing (University of California, Los Angeles, USA), Daniel Harborne (Cardiff University, United Kingdom (Great Britain)), Jonathan Bakdash (US Army Research Lab, USA), Dave Braines (IBM UK Ltd, United Kingdom (Great Britain)), Supriyo Chakraborty (IBM T. J. Watson Research Lab, USA), Lance Kaplan (US Army Research Laboratory, USA), Angelika Kimmig (Cardiff University, United Kingdom (Great Britain)), Alun Preece (Crime and Security Research Institute, United Kingdom (Great Britain)), Ramya Raghavendra (IBM Research, USA), Murat Sensoy (University of Aberdeen, United Kingdom (Great Britain)), Mani B. Srivastava (University of California, Los Angeles, USA) 822

- Security Issues for Distributed Fusion in Coalition Environments

  Greg Cirincione (US Army Research Laboratory, USA), Dinesh Verma (IBM, USA), Elisa Bertino (Purdue University, USA), Ananthram Swami (Army Research Lab., USA) 830

- Why the Failure? How Adversarial Examples Can Provide Insights for Interpretable Machine Learning

  Richard Tomsett (IBM UK, United Kingdom (Great Britain)), Amy Widdicombe (UCL, United Kingdom (Great Britain)), Tianwei Xing (University of California, Los Angeles, USA), Supriyo Chakraborty (IBM, USA), Simon Julier (University College London, United Kingdom (Great Britain)), Prudhvi Gurram (Booz Allen Hamilton & US Army Research Laboratory, USA), Raghuveer Rao (AFRL, USA), Mani B. Srivastava (University of California, Los Angeles, USA) 838

3g - Sensor/Resource Management

- Remote State Estimation with Data-driven Communication and Guaranteed Stability

  Xiaolei Bian (University of New Orleans, USA), X. Rong Li (University of New Orleans, USA), Vesselin P. Jilkov (University of New Orleans, USA) 846

- Covariance Cost Functions for Scheduling Multistatic Sonobuoy Fields

  Christopher Gilliam (RMIT University, Australia), Daniel Angley (University of Melbourne, Australia, Australia), Simon Williams (RMIT University, Australia), Branko Ristic (RMIT University, Australia), Bill Moran (University of Melbourne, Australia, Australia), Fiona Fletcher (DSTO, Australia, Australia), Sergey Simakov (DSTO, Australia) 854

- A Suboptimal Multi-sensor Management Based on Cauchy-Schwarz Divergence for Multi-target Tracking

  Guchong Li (University of Electronic Science and Technology of China, P.R. China), Suqi Li (University of Electronic Science and Technology of China, P.R. China), Wei Yi (University of Electronic Science and Technology of China, P.R. China), T. Zhou (University of Electronic Science and Technology of China, P.R. China), Lingjiang Kong (University of Electronic Science and Technology of China, P.R. China) 862

- Efficient Resource Management for Phased Array Radar Based on the Estimation of Target's Maneuvering Parameters

  Ting Cheng (University of Electronic Science and Technology, P.R. China), Xiaoying Lu (University of Electronic Science and Technology of China, P.R. China), Jie Zhang (University of Electronic Science and Technology of China, P.R. China) 870

3h - Fuzzy Sets/ Set Membership

- Simplified Desirability Level Metrics for Estimation Performance Evaluation

  Yanhui Mao (Xi'an Shiyou University, P.R. China), Yongxin Gao (Xi'an Jiaotong University, P.R. China) 877

- Training Instance Random Sampling Based Evidential Classification Forest Algorithms

  Liyao Ma (University of Jinan, P.R. China), Bin Sun (Blekinge Institute of Technology, Sweden), Chunyan Han (University of Jinan, P.R. China) 883

- Geo-Referencing of a Multi-Sensor System Based on Set-membership Kalman Filter

  Ligang Sun (Leibniz University Hannover, Germany), Hamza Alkhatib (Leibniz Universität Hannover, Germany), Jens-André Paffenholz (Leibniz University Hannover, Germany), Ingo Neumann (Leibniz Universität Hannover, Germany) 889

- Multisensor Data Fusion Using Equation Checking and Fuzzy Rules

  Patrice Brot (Airbus, France) 897

- A Fuzzy Approach for Detecting and Defending Against Spoofing Attacks on Low Interaction Honeypots

  Nitin Naik (Ministry of Defence, United Kingdom (Great Britain)), Paul Jenkins (Ministry of Defence, United Kingdom (Great Britain)) 904

3i - Imaging Methods / Image Processing

- Fast Multi-Coil Parallel MR Imaging Based on a Combination of the Optimum Interpolation Approximation and Compressed Sensing

  Yuichi Kida (Ohu University, Japan), Takuro Kida (Tokyo Institute of Technology, Japan) 911

- Person Recognition Based on Micro-Doppler and Thermal Infrared Camera Fusion for Firefighting

  Michael Ulrich (University of Stuttgart, Germany), Thomas Hess (University of Stuttgart, Germany), Sherif Abdulatif (University of Stuttgart, Germany), Bin Yang (University of Stuttgart, Germany) 919

- Color Image Segmentation Based on Evidence Theory and Two-dimensional Histogram

  Yan Liu (Xian Jiaotong University, P.R. China), Deqiang Han (Xi'an Jiaotong University, P.R. China), Zhe Zhang (Xi'an Jiaotong University, P.R. China), Weifeng Liu (Hangzhou Dianzi University, Xiasha Higher Eduction Zone, Hangzhou, Zhejiang Province, P.R. China), Feihu Zhang (Northwestern Polytechnical University, P.R. China) 927

- Probabilistic Multi Hypothesis Tracker for an Event Based Sensor

  Brian Cheung (DSTO, Australia), Mark Rutten (DSTO, Australia), Samuel Davey (DSTO, Australia), Greg Cohen (Western Sydney University, Australia), Neil Gordon (DSTO, Australia) 933

- Object Tracking via Deep Multi-view Compressive Model for Visible and Infrared Sequences

  Ningwen Xu (Shanghai Jiao Tong University, P.R. China), Gang Xiao (Shanghai Jiaotong University, P.R. China), Fang He (Shanghai Jiao Tong University, P.R. China), Xingchen Zhang (Shanghai Jiao Tong University, P.R. China), Durga Prasad Bavirisetti (Shanghai Jiao Tong University, Shanghai, P.R. China) 941

4a - SS: Forty Years of Multiple Hypothesis Tracking 2

- Success Rates and Posterior Probabilities in Multiple Hypothesis Tracking

Edmund Brekke (NTNU, Norway), Mandar Chitre (National University of Singapore, Singapore) 949

- On Anti-symmetry in Multiple Target Tracking

  Wolfgang Koch (Fraunhofer FKIE & University of Bonn, Germany) 957

- Analytic Combinatorics and Labeling in High Level Fusion and Multihypothesis Tracking

  Roy Streit (Metron Inc., USA) 965

- Poisson Multi-Bernoulli Mixture Trackers: Continuity Through Random Finite Sets of Trajectories

  Karl Granström (Chalmers University of Technology, Sweden), Lennart Svensson (Chalmers University, Sweden), Yuxuan Xia (Chalmers University of Technology, Sweden), Jason L Williams (Defence Science and Technology Group, Australia), Ángel F. García-Fernández (University of Liverpool, United Kingdom (Great Britain)) 973

- Conditions for MHT to Be an Exact Bayesian Solution to the Multiple Target Tracking Problem

  Lawrence D Stone (Metron Inc., USA) 982

4b - SS: Physics-based and Human-derived Information Fusion

- Fusing Bearing-only Measurements with and Without Propagation Delays Using Particle Trajectories

  Paul R Horridge (University of Liverpool, United Kingdom (Great Britain)), Simon Maskell (Univ of Liverpool, United Kingdom (Great Britain)) 989

- Physics-Based and Human-derived Information Fusion Video Activity Analysis

  Erik Blasch (Air Force Research Lab, USA), Alex Aved (AFRL, USA) 997

- Convolutional Neural Networks for Aerial Multi-Label Pedestrian Detection

  Amir Soleimani (West Virginia University, USA), Nasser Nasrabadi (West Virginia University, USA) 1005

- Learning the Parameters of Spatially-Referring Natural Language Likelihoods in Binary Models

  Sanjeev Arulampalam (Defence Science and Technology Group, Australia), Branko Ristic (RMIT University, Australia), Jonathan Legg (Defence Science and Technology Group, Australia) 1011

- On Integrating Human Decisions with Physical Sensors for Binary Decision Making

Thakshila Wimalajeewa (Syracuse University, USA), Pramod Varshney (Syracuse University, USA), Muralidhar Rangaswamy (AFRL, USA) 1018

4c - Belief Functions

- Context Awareness in Uncertain Pervasive Computing and Sensors Environment

  Faouzi Sebbak (Ecole Militaire Polytechnique, Algeria), Sofiane Bouznad (Ecole Militaire Polytechnique, Algeria), Farid Benhammadi (M. Polytechnic School, Algeria), Abdelghani Chibani (LISSI Lab., France), Yacine Amirat (University Paris XII, France) 1026

- 2CoBel: An Efficient Belief Function Extension for Two-dimensional Continuous Spaces

  Nicola Pellicanò (Université Paris-Sud, France), Sylvie Le Hégarat (Paris Sud Orsay, France), Emanuel Aldea (Université Paris-Sud, France) 1032

- Total Belief Theorem and Generalized Bayes' Theorem

  Jean Dezert (Onera, France), Albena Tchamova (Bulgarian Academy of Sciences, Institute of Information and Communication Technologies, Bulgaria), Deqiang Han (Xi'an Jiaotong University, P.R. China) 1040

- Credibilistic Independence of Two Propositions

  Jean Dezert (Onera, France), Albena Tchamova (Bulgarian Academy of Sciences, Institute of Information and Communication Technologies, Bulgaria), Deqiang Han (Xi'an Jiaotong University, P.R. China) 1048

- Motion State Classification for Automotive LIDAR Based on Evidential Grid Maps and Transferable Belief Model

  Jens Honer (Valeo, Germany), Hanne Hettmann (Valeo, Germany) 1056

4d - Parameter Estimation/ Covariance Estimation/ Model Callibration

- Improved Shrinkage-to-Tapering Estimation for High-Dimensional Covariance Matrices

  Jianbo Li (Sichuan University, P.R. China), Jie Zhou (Sichuan University, P.R. China), Bin Zhang (Sichuan University, P.R. China) 1064

- Weak in the NEES?: Auto-tuning Kalman Filters with Bayesian Optimization

  Zhaozhong Chen (University of Colorado at Boulder, USA), Christoffer Heckman (University of Colorado Boulder, USA), Simon Julier (University College London, United Kingdom (Great Britain)), Nisar Ahmed (University of Colorado Boulder, USA) 1072

- On Constraints in Parameter Estimation and Model Misspecification

  Christ D. Richmond (Arizona State University & Ira A. Fulton Schools of Engineering, USA) 1080

- Robust MIMO Channel Estimation from Incomplete and Corrupted Measurements

  Fuxi Wen (Chalmers University of Technology, Sweden), Zhongmin Wang (Xi'an University of Posts and Telecommunications, P.R. China), Chen Liang (Xian University of Posts and Telecommunications, P.R. China) 1086

4e - SS: Advanced Nonlinear Filters 2

- Particle Gaussian Mixture Filters-II

  Dilshad Akkam Veettil (Texas A&M University, USA), Suman Chakravorty (Texas A&M University, USA) 1092

- A Novel Gaussian Mixture Approximation for Nonlinear Estimation

  Renato Zanetti (The University of Texas at Austin, USA), Kirsten Tuggle (The University of Texas at Austin, USA) 1100

- On Canonical Polyadic Decomposition of Non-Linear Gaussian Likelihood Functions

  Felix Govaers (Fraunhofer FKIE / University of Bonn, Germany) 1107

- Non-Linear Continuous-Discrete Smoothing by Basis Function Expansions of Brownian Motion

  Filip Tronarp (Aalto University, Finland), Simo Särkkä (Aalto University, Finland) 1114

- Recursive Sliding-Window Algorithm for Constrained Multiple-Model MAP Estimation

  Jeffrey H. Ledet (University of New Orleans, USA), Vesselin P. Jilkov (University of New Orleans, USA), X. Rong Li (University of New Orleans, USA) 1122

4f - Network Tracking

- An Optimal Node Depth Adjustment Method with Computation-efficiency for Target Tracking in UWSNs

  Junhai Luo (University of Electronic Science and Technology of China, P.R. China), Ying Han (University of Electronic Science and Technology of China, P.R. China), Yue Chen (University of Electronic Science and Technology of China, P.R. China) 1130

- Efficient Factor Graph Fusion for Multi-robot Mapping and Beyond

Ramkumar Natarajan (Carnegie Mellon University, USA), Michael Gennert (Worcester Polytechnic Institute, USA) 1137

- Distributed Evidential EM Algorithm for Gaussian Mixtures in Sensor Network with Uncertain Data

  Hao Zhu (University of Chongqing of Posts and Telecommunications, P.R. China), Ke Zou (University of Chongqing of Posts and Telecommunications, P.R. China), Yongfu Li (Chongqing University of Posts and Telecommunications, P.R. China), Zhen Tian (Chongqing University of Posts and Telecommunications, P.R. China) 1146

- User Positioning in mmW 5G Networks Using Beam-RSRP Measurements and Kalman Filtering

  Elizaveta Rastorgueva-Foi (Tampere University of Technology, Finland), Mario Costa (Huawei Technologies Oy (Finland) Co., Ltd., Finland), Mike Koivisto (Tampere University of Technology, Finland), Kari Leppanen (Huawei Technologies, Finland), Mikko Valkama (Tampere University of Technology, Finland) 1150

4g - Networks/ Community Detection/ Sentiment analysis/ Anomaly detection

- Controlled Sentiment Sampling for Information Fusion in Social Networks

  Sujay Bhatt (Cornell University, USA), Vikram Krishnamurthy (Cornell Tech, USA), Muralidhar Rangaswamy (AFRL, USA) 1157

- Semi-supervised Soft Label Propagation Based on Mass Function for Community Detection

  Jintao Meng (University of Science & Technology Beijing, P.R. China), Fu Dongmei (University of Science and Technology of Beijing, P.R. China), Tao Yang (University of Science and Technology Beijing, P.R. China) 1163

- Maritime Anomaly Detection Based on Mean-Reverting Stochastic Processes Applied to a Real-World Scenario

  Enrica d'Afflisio (CMRE, Italy), Paolo Braca (CMRE, Italy), Leonardo Maria Millefiori (NATO STO CMRE, Italy), Peter Willett (University of Connecticut, USA) 1171

- Hybrid Bernoulli Filtering for Detection and Tracking of Anomalous Path Deviations

  Nicola Forti (NATO STO CMRE, Italy), Leonardo Maria Millefiori (NATO STO CMRE, Italy), Paolo Braca (CMRE, Italy) 1178

- Short Term Traffic Flow Prediction with Particle Methods in the Presence of Sparse Data

  Kennedy John Offor (The University of Sheffield, United Kingdom (Great Britain) &

Chukwuemeka Odumegwu Ojukwu University, Nigeria), Matthew Hawes (The University of Sheffield, United Kingdom (Great Britain)), Lyudmila Mihaylova (University of Sheffield, United Kingdom (Great Britain)) 1185

4h - Multisensor Fusion

- Correlation of Gaussian Mixture Tracks

  Terrence L. Ogle (Georgia Tech Research Institute, USA), Peter Willett (University of Connecticut, USA), Benjamin Davis (Georgia Tech & GTRI, USA), William Dale Blair (Georgia Institute of Technology & Georgia Tech Research Institute, USA) 1193

- Multi-sensor Multi-object Tracking with Different Fields-of-view Using the LMB Filter

  Suqi Li (University of Electronic Science and Technology of China, P.R. China), Giorgio Battistelli (Università di Firenze, Italy), Luigi Chisci (Università di Firenze, Italy), Wei Yi (University of Electronic Science and Technology of China, P.R. China), Bailu Wang (University of Electronic Science and Technology of China, P.R. China), Lingjiang Kong (University of Electronic Science and Technology of China, P.R. China) 1201

- Iterated Extended Kalman Filter with Implicit Measurement Equation and Nonlinear Constraints for Information-Based Georeferencing

  Sören Vogel (Leibniz Universität Hannover, Germany), Hamza Alkhatib (Leibniz Universität Hannover, Germany), Ingo Neumann (Leibniz Universität Hannover, Germany) 1209

- Multi-Sensor Fusion for Obstacle Detection and Recognition: A Belief-based Approach

  Mokhtar Bouain (University of Valenciennes & LAMIH, France), Denis Berdjag (University of Valanciennes, France), Nizar Fakhfakh (NAVYA, France), Rabie Ben Atitallah (University of Valenciennes and Hainaut Cambrésis, France) 1217

- On Multi-Sensor Radar Configurations for Vehicle Tracking in Autonomous Driving Environments

  Amanda Metzner (University of Massachusetts Lowell, USA), Thanuka Wickramarathne (University of Massachusetts Lowell, USA) 1225

4i - Probability and Point Process Based Methods

- Fast Kernel Density Estimation Using Gaussian Filter Approximation

  Markus Bullmann (University of Applied Sciences Würzburg-Schweinfurt, Germany), Toni Fetzer (University of Applied Sciences Würzburg-Schweinfurt, Germany), Frank Ebner (University of Applied Sciences Wuerzburg-Schweinfurt, Germany), Frank Deinzer (University of Applied Sciences Würzburg-Schweinfurt, Germany), Marcin Grzegorzek (University of Siegen, Germany) 1233

- Non-linear Estimation with Generalised Compressed Kalman Filter

  Karan Narula (University of New South Wales, Australia), Jose Guivant (The University of New South Wales, Australia), Xeusong Li (University of New South Wales, Australia) 1241

- A Linear-Complexity Second-Order Multi-Object Filter via Factorial Cumulants

  Daniel Clark (Telecom SudParis, France), Flávio De Melo (Heriot-Watt University, United Kingdom (Great Britain)) 1250

- Alternative EM Algorithms for Nonlinear State-space Models

  Johan Wahlström (KTH Royal Institute of Technology, Sweden), Joakim Jaldén (KTH Royal Institute of Technology, Sweden), Isaac Skog (KTH Royal Institute of Technology, Sweden), Peter Händel (Royal Institute of Technology, Sweden) 1260

- Fusion of Dependent Detection Systems Using Copula Theory

  Mark E Oxley (Air Force Institute of Technology, USA), Christine M Schubert Kabban (Air Force Institute of Technology, USA) 1268

5a - Data Association

- Narrow-Band Through-Wall Imaging with Received Signal Strength Data

  Lingxiao Cao (University of Electronic Science and Technology of China, P.R. China), Guolong Cui (University of Electronic Science and Technology of China (UESTC), P.R. China), Lingjiang Kong (University of Electronic Science and Technology of China (UESTC), P.R. China), Shisheng Guo (University Of Electronic Science And Technology Of China, P.R. China), Huquan Li (University of Electronic Science and Technology of China, P.R. China), Guohao Chen (University Of Electronic Science And Technology Of China, P.R. China) 1274

- A Fast Track to Track Association Algorithm by Sequence Processing of Target States

  Aybars Tokta (Gebze Technical University, Turkey), Koksal Hocaoglu (Gebze Teknik Universitesi, Turkey) 1280

- Evidential Object Association Using Heterogeneous Sensor Data

  Hind Laghmara (Université Haute-Alsace, France), Mohammed Boumediene (Universty of Sciences and Technologie of Oran (ALGERIA), Algeria), Christophe Cudel (Universite de Haute Alsace, France), Jean-Philippe Lauffenburger (Université de Haute-Alsace - IRIMAS & ENSISA, France) 1285

- Tracking Multiple Maneuvering Targets Using Integer Programming and Spline Interpolation

  Ketan Date (University of Illinois at Urbana-Champaign, USA), Rakesh Nagi (University of

Illinois at Urbana-Champaign, USA) 1293

- Non-elliptical Validation Gate for Maritime Target Tracking

  Brita Gade (Norwegian Defence Research Establishment (FFI), Norway), Morten Kloster (Norwegian Defence Research Establishment (FFI), Norway), Morten Aronsen (Norwegian Defence Research Establishment (FFI), Norway) 1301

5b - SS: Novel Information Fusion Methodologies for Space Domain Awareness

- A New Representation of Uncertainty for Data Fusion in SSA Detection and Tracking Problems

  Emmanuel D. Delande (University of Texas at Austin, USA), Jeremie Houssineau (National University of Singapore, Singapore), Moriba Jah (University of Texas at Austin, USA, United Kingdom (Great Britain)) 1309

- Filtering When Object Custody is Ambiguous

  John Kent (University of Leeds, United Kingdom (Great Britain)), Shambo Bhattacharjee (University of Leeds, United Kingdom (Great Britain)), Islam Hussein (Applied Defense Solutions, USA), Weston Faber (Applied Defense Solutions, USA), Moriba Jah (University of Texas at Austin, United Kingdom (Great Britain)) 1317

- Fusion Methodologies for Orbit Determination with Distributed Sensor Networks

  James McCabe (Missouri University of Science and Technology, USA), Kyle DeMars (Missouri University of Science and Technology, USA) 1323

- Autonomous Multi-Phenomenology Space Domain Sensor Tasking and Adaptive Estimation

  Dylan Thomas (Virginia Tech, USA), Kevin Nastasi (Virginia Tech, USA), Jonathan Black (Virginia Tech, USA), Kevin Schroeder (Virginia Tech, USA) 1331

- Space Situational Awareness Sensor Tasking: A Comparison Between Step-scan Tasking and Dynamic, Real-time Tasking

  Nicholas Moretti (Inovor Technologies, Australia), Mark Rutten (Defence, Science and Technology Group, Australia), Travis Bessell (DSTO, Australia), Neil Gordon (DSTO, Australia) 1339

5c - SS: Indoor Positioning

- Continuous-Discrete Von Mises-Fisher Filtering on S2 for Reference Vector Tracking

  Filip Tronarp (Aalto University, Finland), Roland Hostettler (Aalto University, Finland), Simo

Särkkä (Aalto University, Finland) 1345

- Scalable Magnetic Field SLAM in 3D Using Gaussian Process Maps

  Manon Kok (Delft University of Technology, The Netherlands), Arno Solin (Aalto University, Finland) 1353

- Inertial Odometry on Handheld Smartphones

  Arno Solin (Aalto University, Finland), Santiago Cortes Reina (Aalto University, Finland), Esa Rahtu (Tampere University of Technology, Finland), Juho Kannala (Aalto University, Finland) 1361

- Proof of Concept Tests on Cooperative Tactical Pedestrian Indoor Navigation

  Maija Mäkelä (Finnish Geospatial Research Institute FGI, Finland), Martti Kirkko-Jaakkola (Finnish Geospatial Research Institute FGI, Finland), Jesperi Rantanen (Finnish Geospatial Research Institute FGI, Finland), Laura Ruotsalainen (Finnish Geospatial Research Institute FGI, Finland) 1369

- Gaussian Processes for RSS Fingerprints Construction in Indoor Localization

  Yuxin Zhao (Ericsson AB, Sweden), Chao Liu (University of Sheffield, United Kingdom (Great Britain)), Lyudmila Mihaylova (University of Sheffield, United Kingdom (Great Britain)), Fredrik Gunnarsson (Ericsson Research, Sweden) 1377

5d - SS: Multi-layered Fusion Processes: Exploiting Multiple Models and Levels of Abstraction for Understanding and Sense-Making 1

- Polymorphic Information Exchange Model for the Purpose of Multi-level Fusion of Hard and Soft Information

  Ksawery A Krenc (Military University of Technology, Poland) 1385

- Context-Based Goal-Driven Reasoning for Improved Target Tracking

  Lubos Vaci (University of Sheffield, United Kingdom (Great Britain)), Lauro Snidaro (University of Udine, Italy), GianLuca Foresti (University of Udine, Italy) 1391

- Conflict Management for Bayesian and DST Multi-Sensor Occupancy Grid Mapping

  Lubos Vaci (University of Sheffield, United Kingdom (Great Britain)), Lauro Snidaro (University of Udine, Italy), Giuseppe Giorgio (Magneti Marelli S.p.A., Italy), Axel Furlan (Magneti Marelli S.p.A., Italy) 1399

- Control Diffusion of Information Collection for Situation Understanding Using Boosting MLNs

  Erik Blasch (Air Force Research Lab, USA), Robert Cruise (Naval Surface Warfare Center, USA), Sriraam Natarajan (The University of Texas at Dallas, USA), Ali Raz (Purdue University, USA), Tim Kelley (NSWC Crane, USA) 1407

- High-level Tracking Using Bayesian Context Fusion

  Patrick de Oude (Thales Research & Technology Netherlands, The Netherlands), Gregor Pavlin (Thales Research and Technology, The Netherlands), Johan P de Villiers (University of Pretoria & CSIR, South Africa) 1415

5f - Point Process Methods 2

- Multipath Generalized Labeled Multi-Bernoulli Filter

  Bin Yang (Beihang University, P.R. China), Wang Jun (Beihang University, P.R. China), Wenguang Wang (Beihang University, P.R. China), Shaoming Wei (Beihang University, P.R. China) 1423

- Trajectory Probability Hypothesis Density Filter

  Ángel F. García-Fernández (University of Liverpool, United Kingdom (Great Britain)), Lennart Svensson (Chalmers University, Sweden) 1430

- Receding Horizon Estimation for Multi-Target Tracking via Random Finite Set Approach

  Du Yong Kim (RMIT University, Australia) 1438

- Distinguishing Wanted and Unwanted Targets Using Point Processes

  Isabel Schlangen (Fraunhofer FKIE, Germany), Christoph Degen (Fraunhofer FKIE, Germany), Alexander Charlish (Fraunhofer FKIE, Germany) 1445

- GMPHD Based Multi-Scan Clutter Sparsity Estimation

  Yunfei Guo (Hangzhou Dianzi University, P.R. China), Jinxing Pan (Hangzhou Dianzi University, P.R. China), Peng Dongliang (Hangzhou Dianzi University, P.R. China), Zhikun Chen (Hangzhou Dianzi University, P.R. China), Han Shen-Tu (Hangzhou Dianzi University, P.R. China) 1453

5g - Sensor Registration

- Joint Registration of Multiple Point Sets by Preserving Global and Local Structure

  Hao Zhu (University of Chongqing of Posts and Telecommunications, P.R. China), Bin Guo (University of Chongqing of Posts and Telecommunications, P.R. China), Ka-Veng Yuen

(University of Macau, P.R. China), Henry Leung (University of Calgary, Canada), Yongfu Li (Chongqing University of Posts and Telecommunications, P.R. China), Zhen Tian (Chongqing University of Posts and Telecommunications, P.R. China) 1459

- Joint Tracking and Registration in Multi-Target Multi-Sensor Surveillance Using Factor Graphs

  Maximilian Westenkirchner (MBDA Germany, Germany), Michael Ger (MBDA Germany, Germany) 1464

- On Universal Sensor Registration

  Daniel Sigalov (Rafael Advanced Defense Systems Ltd., Israel), Aharon Gal (Rafael Advanced Defense Systems Ltd., Israel), Boaz Vigdor (Rafael Advanced Defense Systems Ltd., Israel) 1472

- Accurate Registration of Multitemporal UAV Images Based on Detection of Major Changes

  Fang Xu (Wuhan University, P.R. China), Huai Yu (Wuhan University, P.R. China), Jinwang Wang (Wuhan University, P.R. China), Wen Yang (School of Electronic Information, Wuhan University, P.R. China) 1480

- Consensus and EM Based Sensor Registration in Distributed Sensor Networks

  Kai Shen (Shanghai Jiao Tong University, P.R. China), Zhongliang Jing (Shanghai Jiao Tong University, P.R. China), Peng Dong (Shanghai Jiao Tong University, P.R. China), Yinshuai Sun (Shanghai Jiao Tong University, P.R. China), Jiyuan Cai (Shanghai Jiao Tong University, P.R. China) 1486

5h - Image Fusion

- The Information Fusion of the IR and UV Image for the Insulation Fault Diagnosis

  Jianyong Ai (Tongji University, P.R. China), Li Ma (Tongji University & None, P.R. China), Kai Gao (State Grid, P.R. China), Lijun Jin (Tongji University, P.R. China) 1491

- MIMO Through-Wall-Radar Spotlight Imaging Based on Arithmetic Image Fusion

  Yong Jia (Chengdu University of Technology, P.R. China), Chenghua Cui (Chengdu Monitoring Station of the National Radio Monitoring Center, P.R. China), Chao Yan (Chengdu University of Technology, P.R. China), Xiaoling Zhong (Chengdu University of Technology, P.R. China), Yong Guo (Chengdu University of Technology, P.R. China), Guohao Chen (University Of Electronic Science And Technology Of China, P.R. China) 1498

- Comparing Interrelationships Between Features and Embedding Methods for Multiple-View Fusion

  Roberta Piroddi (University of Liverpool, United Kingdom (Great Britain)), Jason F. Ralph

(University of Liverpool, United Kingdom (Great Britain)), Yannis Goulermas (University of Liverpool, United Kingdom (Great Britain)), Simon Maskell (Univ of Liverpool, United Kingdom (Great Britain)) 1503

- A New Image and Video Fusion Method Based on Cross Bilateral Filter

  Durga Prasad Bavirisetti (Shanghai Jiao Tong University, Shanghai, P.R. China), Gang Xiao (Shanghai Jiaotong University, P.R. China), Xingchen Zhang (Shanghai Jiao Tong University, P.R. China), Junhao Zhao (Shanghai Jiaotong University, P.R. China), Pengbo Wang (Shanghai Jiaotong University, P.R. China) 1511

- Multi-camera Matching of Spatio-Temporal Binary Features

  Alessio Xompero (Queen Mary University of London, Italy), Oswald Lanz (Fondazione Bruno Kessler, Italy), Andrea Cavallaro (Queen Mary University of London, United Kingdom (Great Britain)) 1519

5i - Distributed Fusion

- Information Decorrelation for an Interacting Multiple Model Filter

  Duygu Acar (Aselsan Inc., Turkey), Umut Orguner (Middle East Technical University, Turkey) 1527

- Unscented Information Consensus Filter for Maneuvering Target Tracking Based on Interacting Multiple Model

  Ziran Ding (Research Institute of Information Fusion, P.R. China), Liu Yu (Naval Aeronautical and Astronautical University, P.R. China), Jun Liu (Research Institute of Information Fusion, P.R. China), Shun Sun (Research Institute of Information Fusion, P.R. China), Lin Qi (Naval Aeronautical and Astronautical University, P.R. China) 1535

- Energy-efficient Decision Fusion for Distributed Detection in Wireless Sensor Networks

  Nandan Sriranga (PES University, India), Nagananda K (Lehigh University, USA), Rick Blum (Lehigh University, USA), Augustin Saucan (Syracuse University, USA), Pramod Varshney (Syracuse University, USA) 1541

- Multi-sensor Multi-frame Detection Based on Posterior Probability Density Fusion

  Jinghe Wang (University of Electronic Science and Technology of China, P.R. China), Wei Yi (University of Electronic Science and Technology of China, P.R. China), Lingjiang Kong (University of Electronic Science and Technology of China, P.R. China), Ye Yuan (University of Electronic Science and Technology of China, P.R. China) 1548

- Distributed RGBD Camera Network for 3D Human Pose Estimation and Action Recognition

Junwei Li (Shandong University, P.R. China), Guoliang Liu (Shandong University, P.R. China), Guohui Tian (Shandong Jianzhu University, P.R. China), Xianglai Zhu (Shandong University, P.R. China), Ziren Wang (Shandong University, P.R. China) 1554

6a - Algorithms for Tracking

- Distributed Cross-Entropy delta-GLMB Filter for Multi-Sensor Multi-Target Tracking

  Augustin Saucan (Syracuse University, USA), Pramod Varshney (Syracuse University, USA) 1559

- Target Tracking Using an Asynchronous Multistatic Sensor System with Unknown Transmitter Positions

  Rong Yang (Asian Society of Information Exploitaion, Singapore), Yaakov Bar-Shalom (University of Connecticut, USA), Gee Wah Ng (DSO National Laboratories, Singapore) 1567

- Performance Evaluation for Large-scale Multi-target Tracking Algorithms

  Michael Beard (Curtin University, Australia), Ba-Tuong Vo (Curtin University, Australia), Ba-Ngu Vo (Curtin University, Australia) 1575

- Quanta Tracking Algorithm for Low SNR Targets: How Low Can It Go?

  Darin Dunham (Lockheed Martin, USA), Peter Willett (University of Connecticut, USA), Terrence L. Ogle (Georgia Tech Research Institute, USA) 1582

- Higher Degree Cubature Quadrature Kalman Filter for Randomly Delayed Measurements

  Kundan Kumar (Indian Institute of Technology Patna, India), Shovan Bhaumik (Indian Institute of Technology Patna, India) 1589

6b - SS: Remote Sensing Data Fusion

- Time-series 3D Building Change Detection Based on Belief Functions

  Jiaojiao Tian (German Aerospace Center (DLR), Germany), Jean Dezert (Onera, France), Rongjun Qin (The Ohio State University, USA) 1595

- Fusing Spaceborne SAR Interferometry and Street View Images for 4D Urban Modeling

  Yuanyuan Wang (Technical University of Munich, Germany), Jian Kang (Technical University of Munich, Germany), Xiao Xiang Zhu (German Aerospace Center (DLR), Remote Sensing Technology & Technical University of Munich (TUM), Signal Processing in Earth Observation, Germany) 1601

- Object-related Alignment of Heterogeneous Image Data in Remote Sensing

Stefan Auer (German Aerospace Center, Germany), Michael Schmitt (Technical University of Munich (TUM), Germany), Peter Reinartz (German Aerospace Center (DLR), Germany) 1607

- Geometric Multi-Wavelet Total Variation for SAR Image Time Series Analysis

  Abdourrahmane M. Atto (LISTIC, Université Savoie Mont Blanc, France), Anoumou Kemavo (ONF International, France), Jean-Paul Rudant (Université Paris-Est Marne-la-Vallée, France), Grégoire Mercier (CTO, eXo MAKINA, France) 1615

- Kohonen-based Credal Fusion of Optical and Radar Images for Land Cover Classification

  Imen Hammami (University of Tunis el Manar, Tunisia), Jean Dezert (Onera, France), Grégoire Mercier (CTO, eXo MAKINA, France) 1623

6c - SS: Advances in Distributed Kalman Filtering and Fusion 2

- Encrypted Multisensor Information Filtering

  Mikhail Aristov (Karlsruhe Institute of Technology (KIT), Germany), Benjamin Noack (Karlsruhe Institute of Technology (KIT), Germany), Uwe D. Hanebeck (Karlsruhe Institute of Technology & Karlsruhe Institute of Technology (KIT), Germany), Jörn Müller-Quade (Karlsruhe Institute of Technology (KIT), Germany) 1631

- Reconstruction of Cross-Correlations with Constant Number of Deterministic Samples

  Susanne Radtke (Karlsruhe Institute of Technology, Germany), Benjamin Noack (Karlsruhe Institute of Technology (KIT), Germany), Uwe D. Hanebeck (Karlsruhe Institute of Technology & Karlsruhe Institute of Technology (KIT), Germany), Ondřej Straka (University of West Bohemia, Czech Republic) 1638

- A Handover Triggering Algorithm for Managing Mobility in WSNs

  Jianjun Wen (Technische Universität Dresden, Germany), Waltenegus Dargie (Technische Universität Dresden, Germany) 1646

- Distributed Estimation Using Particles Intersection

  Or Tslil (Ben-Gurion University, Israel), Ori Aharon (Ben-Gurion University of the Negev, Israel), Avishy Carmi (Ben-Gurion University of the Negev, Israel) 1653

- Decentralized Tracking in Sensor Networks with Varying Coverage

  Jonas Nygårds (FOI Swedish Defence Research Agency, Sweden), Viktor Deleskog (FOI Swedish Defence Research Agency, Sweden), Gustaf Hendeby (Linköping University, Sweden) 1661

6d - SS Advanced Nonlinear Filters 3

- Simultaneous Localization and Mapping Using a Novel Dual Quaternion Particle Filter

  Kailai Li (Kalsruhe Institute of Technology(KIT), Germany), Gerhard Kurz (Karlsruhe Institute of Technology (KIT), Germany), Lukas Bernreiter (Karlsruhe Institute of Technology (KIT), Germany), Uwe D. Hanebeck (Karlsruhe Institute of Technology & Karlsruhe Institute of Technology (KIT), Germany) 1668

- Entropy-based Consistency Monitoring for Stochastic Integration Filter

  Ondřej Straka (University of West Bohemia, Czech Republic), Jindřich Duník (University of West Bohemia & Honeywell International, Czech Republic) 1676

- Smooth Bias Estimation for Multipath Mitigation Using Sparse Estimation

  Julien Lesouple (University of Toulouse & TéSA Laboratory, France), Franck Barbiero (CNES, France), Frédéric Faurie (M3 Systems, France), Mohamed Sahmoudi (Telespazio France, France), Jean-Yves Tourneret (University of Toulouse & ENSEEIHT, France) 1684

- Optimized Gauss-Hermite Quadrature with Application to Nonlinear Filtering

  Haozhan Meng (University of New Orleans, USA), X. Rong Li (University of New Orleans, USA), Vesselin P. Jilkov (University of New Orleans, USA) 1691

- Stochastic Integration Filter: Theoretical and Implementation Aspects

  Jindrich Havlik (University of West Bohemia & NTIS, Czech Republic), Ondřej Straka (University of West Bohemia, Czech Republic), Uwe D. Hanebeck (Karlsruhe Institute of Technology & Karlsruhe Institute of Technology (KIT), Germany) 1699

6e - Localisation 2

- Fast and Robust Vehicle Pose Estimation by Optimizing Multiple Pose Graphs

  Maximilian Harr (Opel Automobile GmbH, Germany), Johannes Janosovits (Karlsruhe Institute of Technology, Germany), Sascha Wirges (Karlsruhe Institute of Technology, Germany), Christoph Stiller (Karlsruhe Institute of Technology, Germany) 1707

- Train Localization with Particle Filter and Magnetic Field Measurements

  Benjamin Siebler (German Aerospace Center (DLR), Germany), Oliver Heirich (German Aerospace Center (DLR), Germany), Stephan Sand (German Aerospace Center (DLR), Germany) 1715

- Universal Kriging of RSS Databases in a Bayesian Filter

Sebastian Kram (Fraunhofer Institute for Integrated Circuits, Germany), Ivana Lukcin (Fraunhofer Institute for Integrated Circuits, Germany), Chrstian Nickel (Fraunhofer Institute for Integrated Circuits, Germany), Jochen Seitz (Fraunhofer Institute for Integrated Circuits IIS, Germany) 1720

- Bearing-Only Multi-Target Localization for Wireless Array Networks: A Spatial Sparse Representation Approach

  Ji-an Luo (Hangzhou Dianzi University, P.R. China), Yi Fang Shi (Hanyang University, Korea), Han Shen-Tu (Hangzhou Dianzi University, P.R. China), Taek Lyul Song (Hanyang University, Korea), Peng Dongliang (Hangzhou Dianzi University, P.R. China), Yu Gu (Hangzhou Dianzi University, P.R. China) 1726

- Multiple Sound Source Localization Based on a Multi-dimensional Assignment Model

  Xudong Dang (Xi'an Jiaotong University, P.R. China), Hongyan Zhu (School of Electronic and Information Engineering, Xi'an Jiaotong University, P.R. China), Qi Cheng (Oklahoma State University, USA) 1732

6f - SS: Extended Object and Group Tracking

- Extended Object Tracking Using Automotive Radar

  Xiaomeng Cao (Xi'an Jiaotong University, P.R. China), Jian Lan (Xi'an Jiaotong University, P.R. China), X. Rong Li (University of New Orleans, USA), Yu Liu (ZOOX, Inc., USA) 1738

- Radar and Lidar Target Signatures of Various Object Types and Evaluation of Extended Object Tracking Methods for Autonomous Driving Applications

  Stefan Haag (Daimler AG, Germany), Bharanidhar Duraisamy (Daimler AG, Germany), Wolfgang Koch (Fraunhofer FKIE & University of Bonn, Germany), Juergen Dickmann (Daimler AG, Germany) 1746

- A Random Matrix Measurement Update Using Taylor-Series Approximations

  Elif Sarıtaş (Middle East Technical University, Turkey), Umut Orguner (Middle East Technical University, Turkey) 1756

- Extended Target Tracking Using Gaussian Processes with High-Resolution Automotive Radar

  Kolja Thormann (Universität Passau, Germany), Jens Honer (Valeo, Germany), Marcus Baum (University of Passau, Germany) 1764

- A Cartesian B-Spline Vehicle Model for Extended Object Tracking

  Hauke Kaulbersch (Georg-August-Universität Göttingen, Germany), Jens Honer (Valeo, Germany), Marcus Baum (University of Passau, Germany) 1771

6g - Sensor/Resource Management

- A Dwell Scheduling Method for Phased Array Radars Based on New Synthetic Priority

  Xiaoying Lu (University of Electronic Science and Technology of China, P.R. China), Ting Cheng (University of Electronic Science and Technology, P.R. China) 1779

- Sensor Operation Deployment with Multiple Routes per Asset

  Jennifer Sander (Fraunhofer IOSB, Germany), Roland Rodenbeck (Fraunhofer IOSB, Germany), Frank Reinert (Fraunhofer IOSB, Germany), Wilmuth Müller (Fraunhofer Institute of Optronics, System Technologies and Image Exploitation IOSB, Germany), Kim Berude (Fraunhofer IOSB, Germany) 1786

- Evidence Gathering for Hypothesis Resolution Using Judicial Evidential Reasoning

  Andris D Jaunzemis (Georgia Institute of Technology, USA), Marcus Holzinger (Georgia Institute of Technology, USA), Moses Chan (Lockheed Martin, USA), Prakash P Shenoy (University of Kansas, USA) 1794

- A Complete Power Allocation Framework for Multiple Target Tracking with the Purpose of Minimizing the Transmit Power

  Ye Yuan (University of Electronic Science and Technology of China, P.R. China), Wei Yi (University of Electronic Science and Technology of China, P.R. China), Lingjiang Kong (University of Electronic Science and Technology of China (UESTC), P.R. China) 1802

6h - Situational Awareness

- Network Security Situation Awareness for Industrial Control System Under Integrity Attacks

  Genghong Lu (Zhejiang University, P.R. China), Dongqin Feng (Zhejiang University, P.R. China) 1808

- MHT Approach to Ubiquitous Monitoring of Spatio-Temporal Phenomena

  Varun Garg (University of Massachusetts Lowell, USA), Thanuka Wickramarathne (University of Massachusetts Lowell, USA) 1816

- Unsupervised Maritime Traffic Graph Learning with Mean-Reverting Stochastic Processes

  Pasquale Coscia (Universitá degli Studi della Campania Luigi Vanvitelli, Italy), Paolo Braca (CMRE, Italy), Leonardo Maria Millefiori (NATO STO CMRE, Italy), Francesco A. N. Palmieri (Universita' della Campania, Italy), Peter Willett (University of Connecticut, USA) 1822

- High Level Data Fusion Architecture for Threat Assessment in Scenarios with Manouverable

Aerial Targets

José Fernando Basso Brancalion (EMBRAER S.A., Brazil) 1829

- Multi-Model Threat Assessment Involving Low Probability High Consequence Events

  Roman Ilin (AFRL, USA), Galina L. Rogova (University at Buffalo, USA) 1836

6i - SS: Multi-layered Fusion Processes: Exploiting Multiple Models and Levels of Abstraction for Understanding and Sense-Making 2

- Multi-level Information Fusion Approach with Dynamic Bayesian Networks for an Active Perception of the Environment

  Kilian Vasnier (Normandy University & Airbus, France), Abdel-Illah Mouaddib (Normandy Univ, France), Sylvain Gatepaille (AIRBUS, FRANCE, France), Stephan Brunessaux (AIRBUS, France) 1844

- Beyond Sentiments and Opinions: Exploring Social Media with Appraisal Categories

  Valentina Dragos (ONERA, France), Delphine Battistelli (MODYCO, France), Emmanuelle Kelodjoue (ONERA, France) 1851

- Beyond Situation Awareness: Considerations for Sense-making in Complex Intelligence Operations

  Kellyn Rein (Fraunhofer FKIE, Germany), Joachim Biermann (Fraunhofer FKIE, Germany) 1859

- Learning Multi-Modal Self-Awareness Models for Autonomous Vehicles from Human Driving

  Mahdyar Ravanbakhsh (University of Genova, Italy), Mohamad Baydoun (University of Genoa & Queen Mary University of London, Italy), Damian Campo (University of Genova, Italy), Pablo Marin Plaza (University Carlos III & Intelligent Systems Laboratory, Spain), David Martin Gomez (Carlos III University of Madrid, Spain), Lucio Marcenaro (Università degli Studi di Genova, Italy), Carlo S Regazzoni (University of Genoa, Italy) 1866

7a - Sequential Monte Carlo

- A Fast MCMC Particle Filter

  Ori Aharon (Ben-Gurion University of the Negev, Israel), Or Tslil (Ben-Gurion University, Israel), Avishy Carmi (Ben-Gurion University of the Negev, Israel) 1874

- Multi-Ellipsoidal Extended Target Tracking Using Sequential Monte Carlo

Suleyman Fatih Kara (Middle East Technical University & Aselsan Inc., Turkey), Emre Ozkan (Middle East Technical University, Turkey) 1882

- An Efficient Particle Filter for the OOSM Problem in Nonlinear Dynamic Systems

  Ming Li (University Of Electronic Science And Technology Of China, P.R. China), Wei Yi (University of Electronic Science and Technology of China, P.R. China), Qi Yang (UESTC, P.R. China), LingJiang Kong (UESTC, P.R. China) 1890

- A Particle Filter Localisation System for Indoor Track Cycling Using an Intrinsic Coordinate Model

  Jiaming Liang (University of Cambridge, United Kingdom (Great Britain)), Simon Godsill (University of Cambridge, United Kingdom (Great Britain)) 1896

- Auxiliary-Particle-Filter-based Two-Filter Smoothing for Wiener State-Space Models

  Roland Hostettler (Aalto University, Finland), Thomas B. Schön (Uppsala University, Sweden) 1904

7b - SS: Context-based Information Fusion

- Describing Capability Through Lexical Semantics Exploitation: Foundational Arguments

  Giovanni Ferrin (University of Udine, Italy), Lauro Snidaro (University of Udine, Italy), GianLuca Foresti (University of Udine, Italy) 1912

- Gaussian Mixture Based Target Tracking Combining Bearing-Only Measurements and Contextual Information

  Martin Ulmke (Fraunhofer FKIE, Germany), Felix Govaers (Fraunhofer FKIE / University of Bonn, Germany) 1917

- Considerations of Context and Quality in Information Fusion

  Galina L. Rogova (University at Buffalo, USA), Lauro Snidaro (University of Udine, Italy) 1925

- Range-only Based Cooperative Localization for Mobile Robots

  Cyrille Pierre (Institut Pascal, France), Roland Chapuis (Universite Blaise Pascal, France), Romuald Aufrere (Université Blaise Pascal - LASMEA, France), Jean Laneurit (Effidence, France), Christophe Debain (Irstea, France) 1933

- Sequential Event Detection Using Multimodal Data in Nonstationary Environments

  Taposh Banerjee (University of Texas at San Antonio, USA), Gene T Whipps (US Army

Research Laboratory, USA), Prudhvi Gurram (Booz Allen Hamilton & US Army Research Laboratory, USA), Vahid Tarokh (Harvard University, USA) 1940

7c - Distributed Fusion

- Heterogeneous Track-to-Track Fusion Using Equivalent Measurement and Unscented Transform

  Christoph Allig (Denso Automotive Deutschland GmbH, Germany), Gerd Wanielik (Chemnitz University of Technology, Germany) 1948

- Distributed Detection and Estimation Fusion by Maximizing Expected Utility

  Hongyan Zhu (School of Electronic and Information Engineering, Xi'an Jiaotong University, P.R. China), Wenyan Zhu (Xi'an Jiaotong University, P.R. China), Yan Lin (Dept. of Electronic & Information Engineering, Xi'an Jiaotong University, P.R. China) 1955

- The Equivalence Between Distributed and Centralized Best Linear Unbiased Estimation Fusion

  Dunbiao Niu (SiChuan University, P.R. China), Linxia Zhang (Sichuan University, P.R. China), Enbin Song (Sichuan University/University of Minnesota, P.R. China), Yunmin Zhu (Sichuan University, P.R. China) 1961

- Distributed Filtering over Networks Using Greedy Gossip

  Chao Wan (Xi'an Jiaotong University, P.R. China), Yongxin Gao (Xi'an Jiaotong University, P.R. China), X. Rong Li (University of New Orleans, USA), Enbin Song (Sichuan University/ University of Minnesota, P.R. China) 1968

- Collaborative Detector Fusion of Data-Driven PHD Filter for Online Multiple Human Tracking

  Zeyu Fu (Newcastle University, United Kingdom (Great Britain)), Syed Mohsen Naqvi (Newcastle University, United Kingdom (Great Britain)), Jonathon Chambers (University of Leicester, United Kingdom (Great Britain)) 1976

7d - SS: Uncertainty, Trust and Deception in Information Fusion

- Are My Arguments Trustworthy? Abstract Argumentation with Subjective Logic

  Francesco Santini (University of Perugia, Italy), Audun Jøsang (University of Oslo, Norway), Maria Silvia Pini (University of Padova, Italy) 1982

- Multi-Source Fusion Operations in Subjective Logic

  Rens Wouter van der Heijden (Ulm University, Germany), Henning Kopp (Ulm University, Germany), Frank Kargl (Ulm University, Germany) 1990

- Uncertainty Characteristics of Subjective Opinions

  Audun Josang (University of Oslo, Norway), Jin-Hee Cho (Army Research Laboratory, USA), Feng Chen (University of Albany, USA) 1998

- A Trust Logic for Pre-Trust Computations

  Mirko Tagliaferri (University of Urbino, Italy), Alessandro Aldini (University of Urbino, Italy) 2006

- MASA: Multi-agent Subjectivity Alignment for Trustworthy Internet of Things

  Leonit Zeynalvand (Nanyang Technological University, Singapore), Jie Zhang (NTU, Singapore), Tony T. Luo (Institute for Infocomm Research, Singapore), Shuo Chen (Nanyang Technological University, Singapore) 2013

7e - Localisation 3

- Invariant Kalman Filtering for Visual Inertial SLAM

  Martin Brossard (CAOR, Mines Paristech, France), Silvère Bonnabel (CAOR, Mines Paristech, France), Axel Barrau (Safran Tech, France) 2021

- Sound Source Localization Based on Robust Least Squares in Reverberant Environments

  Hongyan Zhu (School of Electronic and Information Engineering, Xi'an Jiaotong University, P.R. China), Xudong Dang (Xi'an Jiaotong University, P.R. China), Zelin Li (Xi'an Jiaotong University & School of Electronic & Information Engineering, P.R. China), Quanbo Ge (Hangzhou Dianzi University, P.R. China) 2029

- 3D Angle-of-Arrival Positioning Using Von Mises-Fisher Distribution

  Henri Nurminen (Tampere University of Technology, Finland), Laura Suomalainen (Tampere University of Technology, Finland), Simo Ali-Löytty (Tampere University of Technology, Finland), Robert Piche (Tampere University of Technology, Finland) 2036

- Millimeter Wave Radar Detection of Moving Targets Behind a Corner

  Qingsong Zhao (University of Electronic Science and Technology of China, P.R. China), Guolong Cui (University of Electronic Science and Technology of China, P.R. China), Shisheng Guo (University Of Electronic Science And Technology Of China, P.R. China), Wei Yi (University of Electronic Science and Technology of China, P.R. China), Lingjiang Kong (University of Electronic Science and Technology of China, P.R. China), Xiaobo Yang (University of Electronic Science and Technology of China, P.R. China) 2042

- Addressing Data Association in Maximum Likelihood SLAM with Random Finite Sets

Felipe Inostroza (Universidad de Chile, Chile), Martin D Adams (University of Chile & Advanced Mining Technology Centre, Chile) 2047

7f - SS: Semi-supervised/unsupervised Learning-based State Estimation

- Improved Adaptive Kalman Filter with Unknown Process Noise Covariance

  Jirong Ma (Northwestern Polytechnical University, P.R. China), Hua Lan (Northwestern Polytechnical University, P.R. China), Zengfu Wang (Northwestern Polytechnical University, P.R. China), Xuezhi Wang (Royal Melbourne Institute of Technology (RMIT) University, Australia), Quan Pan (Northwestern Polytechnical University, P.R. China), Bill Moran (University of Melbourne, Australia, Australia) 2054

- Unscented Particle Double Layer Filter

  Feng Yang (Northwestern Polytechnical University, P.R. China), Litao Zheng (Northwestern Polytechnical University, P.R. China), Wentong Li (Northwestern Polytechnical University, P.R. China), Yongting Wang (Science and Technology on Electro-optic Control Laboratory, P.R. China), Pengxiang Wang (Northwestern Polytechnical University, P.R. China) 2059

- Variational Bayesian Inference for Jump Markov Linear Systems with Unknown Transition Probabilities

  Jingying Cao (Northwestern Polytechnical University, P.R. China), Liang Yan (Northwestern Polytechnical University, P.R. China), Wanying Zhang (Northwestern Polytechnical University, P.R. China), Liu Liwei (Northwestern Polytechnical University, P.R. China) 2065

- Linear Gaussian Regression Filter Based on Variational Bayes

  Xiaoxu Wang (Northwestern Polytechnical University, P.R. China), Haoran Cui (Northwestern Polytechnical University, P.R. China), Quan Pan (Northwestern Polytechnical University, P.R. China), Liang Yan (Northwestern Polytechnical University, P.R. China), Jinwen Hu (Northwestern Polytechnical University, P.R. China), Zhao Xu (Northwestern Polytechnical University, P.R. China) 2072

- OTHR Multipath Tracking with Correlated Virtual Ionospheric Heights

  Zhen Guo (Northwestern Polytechnical University, P.R. China), Zengfu Wang (Northwestern Polytechnical University, P.R. China), Yumei Hu (Northwestern Polytechnical University, P.R. China), Quan Pan (Northwestern Polytechnical University, P.R. China), Jun Zhang (Central China Normal University, P.R. China) 2078

7g - SS: Information Fusion in Multi-Biometrics and Forensics

- Fingerprint and Iris Multi-biometric Data Indexing and Retrieval

Naser Damer (Fraunhofer Institute for Computer Graphics Research (IGD), Germany), Philipp Terhörst (Fraunhofer Institute for Computer Graphics Research (IGD), Germany), Andreas Braun (Fraunhofer Institute for Computer Graphics Research, Germany), Arjan Kuijper (Fraunhofer IGD & TU Darmstadt, Germany) 2083

- A Mobile App Authentication Approach by Fusing the Scores from Multi-modal Data

  Guoqiang Li (Norwegian University of Science and Technology, Norway), Patrick Bours (Norwegian University of Science and Technology, Norway) 2091

- Towards Protected and Cancelable Multi-spectral Face Templates Using Feature Fusion and Kernalized Hashing

  Kiran B. Raja (Norwegian University of Science and Technology (NTNU), Norway), Raghavendra Ramachandra (Norwegian University of Science and Technology (NTNU), Norway), Christoph Busch (NTNU - Gjøvik, Norway) 2098

- Fusion of Multi-scale Local Phase Quantization Features for Face Presentation Attack Detection

  Raghavendra Ramachandra (Norwegian University of Science and Technology (NTNU), Norway), Sushma Venkatesh (NTNU, Norway), Kiran B. Raja (Norwegian University of Science and Technology (NTNU), Norway), Pankaj Shivdayal Wasnik (Norwegian University of Science and Technology, Norway), Martin Stokkenes (NTNU, Norway), Christoph Busch (NTNU - Gjøvik, Norway) 2107

- Deep and Multi-algorithmic Gender Classification of Single Fingerprint Minutiae

  Philipp Terhörst (Fraunhofer Institute for Computer Graphics Research (IGD), Germany), Naser Damer (Fraunhofer Institute for Computer Graphics Research (IGD), Germany), Andreas Braun (Fraunhofer Institute for Computer Graphics Research, Germany), Arjan Kuijper (Fraunhofer IGD & TU Darmstadt, Germany) 2113

7h - Bayesian Methods/ Belief Propagation

- Joint Tracking for Capturing and Classification Based on Joint Decision and Estimation

  Qingqiang Ji (Xi'an Jiaotong University, P.R. China), Jian Lan (Xi'an Jiaotong University, P.R. China), X. Rong Li (University of New Orleans, USA) 2121

- Phase Transition in Bayesian Tracking in Clutter

  Charles Offer (Thales Research Technology and Innovation, United Kingdom (Great Britain)) 2129

- On Bayesian Inference for Continuous-time Autoregressive Models Without Likelihood

  Chunlin Ji (Kuang-Chi Institute of Advanced Technology, P.R. China), Ligong Yang (N A, P.R.

China), Wanchuang Zhu (Tsinghua University, P.R. China), Yiqi Liu (Kuang-Chi Institute of Advanced Technology, P.R. China), Ke Deng (Tsinghua University, P.R. China) 2137

- Belief Propagation Based AIS/Radar Data Fusion for Multi-Target Tracking

  Domenico Gaglione (Centre for Maritime Research and Experimentation (CMRE), Italy), Paolo Braca (CMRE, Italy), Giovanni Soldi (Centre for Maritime Research and Experimentation (CMRE), Italy) 2143

- Online Estimation of Unknown Parameters in Multisensor-Multitarget Tracking: a Belief Propagation Approach

  Giovanni Soldi (Centre for Maritime Research and Experimentation (CMRE), Italy), Paolo Braca (CMRE, Italy) 2151

8a - Deep Learning

- Using Deep Learning for Classifying Ship Trajectories

  Henrik Ljunggren (SAAB AB, Sweden) 2158

- Deep Learning for Military Image Captioning

  Subrata Das (Machine Analytics, Inc., USA), Lalit Jain (Northeastern University, USA), Arup Das (Alphaserve Technologies, USA) 2165

- Doc2Img: A New Approach to Vectorization of Documents

  ShreeRanjani SrirangamSridharan (IBM T J Watson Research Center, USA), Mudhakar Srivatsa (IBM T.J. Watson Research Center, USA), Raghu Ganti (IBM T J Watson Research Center, USA), Christopher Simpkin (Cardiff University, USA) 2172

- Semantic Segmentation on Radar Point Clouds

  Ole Schumann (TU Dortmund University & Daimler AG, Germany), Markus Hahn (DAIMLER AG, Germany), Juergen Dickmann (Daimler AG, Germany), Christian Wöhler (Dortmund University of Technology, Germany) 2179

8b - SS: Sensor, Resources, and Process Management for Information Fusion Systems

- Sequential LMMSE Filtering with Out-of-Sequence Observations Under Nonlinear System

  Ming Lei (Shanghai Jiaotong University, P.R. China), Christophe Baehr (Mr., France), Zhongliang Jing (Shanghai Jiao Tong University, P.R. China) 2187

- Response Surface Modelling for Networked Radar Resource Allocation

  Allan De Freitas (University of Pretoria, South Africa), Richard W. Focke (CSIR, South Africa), Johan P de Villiers (University of Pretoria & CSIR, South Africa) 2195

- Cross-Domain Pseudo-Sensor Information Measure

  Ken Hintz (George Mason University, USA), Steven Darcy (George Mason University, USA) 2202

- Cross-Domain Pseudo-Sensors in IBSM

  Ken Hintz (George Mason University, USA), Steven Brannon (George Mason University, USA), Will Williamson (Naval Postgraduate School, USA), James Scrofani (Naval Postgraduate School, USA) 2208

- Sensor Control for Selective Object Tracking Using Labeled Multi-Bernoulli Filter

  Sabita Panicker (RMIT University, Australia), Amirali Khodadadian Gostar (RMIT University, Australia), Alireza Bab-Hadiashar (RMIT University, Australia), Reza Hoseinnezhad (RMIT University, Australia) 2218

8c - SS: Multi-sensor Data Fusion for Navigation and Localisation 2

- Robust Vehicle Infrastructure Cooperative Localization in Presence of Clutter

  Dhiraj Gulati (Technische Universität München & Fortiss GmbH, Germany), Vincent Aravantinos (Fortiss GmbH, Germany), Nikhil Somani (Technische Universität München, Germany), Alois Knoll (Technical University Munich Garching, Germany) 2225

- Network Localization and Navigation Using Measurements with Uncertain Origin

  Florian Meyer (Massachusetts Institute of Technology, USA), Zhenyu Liu (MIT, USA), Moe Win (Massachusetts Institute of Technology, USA) 2233

- SINS Error Amendment for Deep-diving HOV Using Range-only Positioning

  Xianjun Liu (Southeast University, P.R. China), Tongwei Zhang (National Deep Sea Center, P.R. China), Xixiang Liu (Southeast University, P.R. China) 2240

- Redundant RINS Information Fusion with Application to Shipborne Transfer Alignment

  Lin Wang (National University of Defense Technology, P.R. China), Wenqi Wu (National University of Defense Technology, P.R. China), Junxiang Lian (National University of Defense Technology, P.R. China), Xianglong Kong (China Satellite Maritime Tracking & Controlling Center, P.R. China) 2246

- Multi-robot Autonomous Navigation System Using Informational Fault Tolerant Multi-Sensor Fusion with Robust Closed Loop Sliding Mode Control

    Boussad Abci (University of Sciences and Technololgies of Lille 1, France), Joelle Al Hage (University of Technology of Compiègne, France), Maan El Badaoui El Najjar (Université des Sciences et Technologies de Lille, France), Vincent Cocquempot (University of Sciences and Technololgies of Lille 1, France) 2254

8d - Pattern Analysis/AI

- Closed-loop Bayesian Semantic Data Fusion for Collaborative Human-Autonomy Target Search

    Luke Burks (University of Colorado Boulder, USA), Ian Loefgren (University of Colorado Boulder, USA), Luke Barbier (University of Colorado Boulder, USA), Jeremy Muesing (University of Colorado Boulder, USA), Jamison McGinley (University of Colorado Boulder, USA), Sousheel Vunnam (University of Colorado Boulder, USA), Nisar Ahmed (University of Colorado Boulder, USA) 2262

- A Compact Belief Rule-Based Classifier with Interval-Constrained Clustering

    Lianmeng Jiao (Northwestern Polytechnical University, P.R. China), Xiaojiao Geng (Northwestern Polytechnical University, P.R. China), Quan Pan (Northwestern Polytechnical University, P.R. China), Xiaoxu Wang (Northwestern Polytechnical University, P.R. China) 2270

- Feature Regrouping for CCA-Based Feature Fusion and Extraction Through Normalized Cut

    Zuobin Wu (Nanyang Technological University, Singapore), Kezhi Mao (Nanyang Technological University, Singapore), Gee Wah Ng (DSO National Laboratories, Singapore) 2275

- Anomaly-Aware Traffic Prediction Based on Automated Conditional Information Fusion

    Bin Sun (Blekinge Institute of Technology, Sweden), Wei Cheng (Kunming University of Science and Technology, P.R. China), Liyao Ma (University of Jinan, P.R. China), Prashant Goswami (Blekinge Institute of Technology, Sweden) 2283

8e - SS: Towards a Battlefield IoT: Information Challenges and Solutions

- Risks and Benefits of Side-Channels in Battlefields

    Ioannis Agadakos (Stevens Institute of Technology, USA), Gabriela F. Ciocarlie (SRI International, USA), Bogdan Copos (SRI International, USA), Tancrède Lepoint (SRI International, USA), Ulf Lindqvist (SRI International, USA), Michael Locasto (SRI International, USA), James Michaelis (United States Army Research Laboratory, USA) 2290

- A Command-by-Intent Architecture for Battlefield Information Acquisition Systems

  Jongdeog Lee (University of Illinois at Urbana-Champaign, USA), Kelvin Marcus (Army Research Laboratory, USA), Yifan Hao (University of Illinois at Urbana-Champaign, USA), Reginald Hobbs (Army Research Laboratory, USA), Tarek Abdelzaher (University of Illinois, Urbana Champaign, USA) 2298

- Squadron: Incentivizing Quality-Aware Mission-Driven Crowd Sensing

  Haiming Jin (Shanghai Jiao Tong University, P.R. China), Hongpeng Guo (The University of Illinois at Urbana-Champaign, USA), Klara Nahrstedt (University of Illinois, USA) 2306

- QuickSketch: Building 3D Representations in Unknown Environments Using Crowdsourcing

  Fawad Ahmad (University of Southern California, USA), Hang Qiu (University of Southern California, USA), Xiaochen Liu (USC, USA), Fan Bai (General Motors, USA), Ramesh Govindan (University of Southern California, USA) 2314

8f - Applications of Information Fusion 2

- High-Level Information Fusion of Cyber-Security Expert Knowledge and Experimental Data

  Paulo C.G. Costa (George Mason University, USA), Michael Atighetchi (BBN Technologies, USA), Bo Yu (George Mason University, USA), David Myers (Air Force Research Laboratory, USA) 2322

- Estimation of Value-at-Risk Using Mixture Copula Model for Heavy-Tailed Operational Risk Losses in Financial, Insurance & Climatological Data

  Sabyasachi Guharay (George Mason University & US Internal Revenue Service, USA), Kuochu Chang (George Mason University, USA), Jie Xu (George Mason University, USA) 2330

- Semantic Information Fusion Algebraic Framework Applied to Content Marketing

  Claire Laudy (THALES Research & Technology France, France), Juliette Mattioli (Thales Research & Technology France, France), Laetitia Mattioli (Nowadays Agency, France) 2338

- Map-supported Positioning Enables In-service Condition Monitoring of Railway Tracks

  Michael Roth (German Aerospace Center (DLR), Germany), Benjamin Baasch (German Aerospace Center (DLR), Germany), Patrik Havrila (German Aerospace Center (DLR), Germany), Jörn Groos (German Aerospace Center (DLR), Germany) 2346

- Post-Processing of Multi-Target Trajectories for Traffic Safety Analysis

  Thorben Janz (University of Göttingen, Germany), Andreas Leich (German Aerospace Center (DLR), Germany), Marek Junghans (German Aerospace Center (DLR) & Institute of

Transportation Systems, Germany), Kay Gimm (German Aerospace Center, Germany), Shishan Yang (University of Göttingen, Germany), Marcus Baum (University of Passau, Germany) 2354

8g - Detection Theory/ Methods

- Signal Detection with Elliptically Distributed Observations in Sensor Arrays

  Chen Chen (Sichuan University, P.R. China), Mengjiao Tang (Xi'an Jiaotong University, P.R. China), Jie Zhou (Sichuan University, P.R. China), Yao Rong (Sichuan University, P.R. China) 2362

- Online Design of Precoders for High Dimensional Signal Detection in Wireless Sensor Networks

  Prashant Khanduri (Syracuse University, USA), Lakshmi Narasimhan Theagarajan (Indian Institute of Technology, Palakkad, India), Pramod Varshney (Syracuse University, USA) 2368

- Two-level Clustering-based Target Detection Through Sensor Deployment and Data Fusion

  Chase Q. Wu (New Jersey Institute of Technology & Oak Ridge National Laboratory, USA), Wuji Liu (New Jersey Institute of Technology, USA), Satyabrata Sen (Oak Ridge National Laboratory, USA), Nageswara Rao (Oak Ridge National Laboratory, USA), Richard Ree Brooks (Clemson University, USA), Guthrie Cordone (Clemson University, USA) 2376

8h - SS: Intelligent Information Fusion and Data Mining for Tracking

- Measurement-wise Occlusion in Multi-Object Tracking

  Michael Motro (University of Texas at Austin, USA), Joydeep Ghosh (University of Texas at Austin, USA) 2384

- Pattern Discovery and Anomaly Detection via Knowledge Graph

  Bin Jia (Intelligent Fusion Technology, Inc, USA), Cailing Dong (Intlligent Fusion Techonology. Inc, USA), Zhijiang Chen (Intelligent Fusion Technology. Inc, USA), Kuochu Chang (George Mason University, USA), Nichole Sullivan (Intelligent Fusion Technology. Inc, USA), Genshe Chen (Intelligent Fusion Technology, Inc, USA) 2392

- 2D Spatial Keystone Transform for Sub-Pixel Motion Extraction from Noisy Occupancy Grid Map

  Hongqi Fan (National University of Defense Technology, P.R. China), Dawei Lu (National University of Defense Technology, P.R. China), Kucner Tomasz (Orebro University, Sweden), Magnusson Martin (Orebro University, Sweden), Achim J. Lilienthal (Örebro University, Sweden) 2400

- Model Learning and Spatial Data Fusion for Predicting Sales in Local Agricultural Markets

  Jesus Garcia (Universidad Carlos III de Madrid, Spain), Jose Manuel Molina (Universidad Carlos III de Madrid, Spain), Washington Padilla (Salesian Polytechnic University, Ecuador) 2407

- Distributed Flooding-then-Clustering: A Lazy Networking Approach for Distributed Multiple Target Tracking

  Tiancheng Li (University of Salamanca, Spain), Juan Corchado (Universidad de Salamaca, Spain), Huimin Chen (University of New Orleans, USA) 2415

9a - Data Association/Sensor Registration

- Radar/ESM Anti-bias Track Association Algorithm Based on Hierarchical Clustering in Formation

  Shun Sun (Research Institute of Information Fusion, P.R. China), Congan Xu (Research Institute of Information Fusion, P.R. China), Lin Qi (Naval Aeronautical and Astronautical University, P.R. China), Jun Liu (Research Institute of Information Fusion, P.R. China), Liu Yu (Naval Aeronautical and Astronautical University, P.R. China), Kai Dong (Naval Aeronautical and Astronautical University, P.R. China) 2423

- Retrodiction of Data Association Probabilities via Convex Optimization

  Selim Ozgen (Karlsruhe Institute of Technology, Germany), Marco Huber (USU Software AG & Karlsruhe Institute of Technology (KIT), Germany), Florian Rosenthal (Karlsruhe Institute of Technology, Germany), Jana Mayer (Karlsruhe Institut of Technology, Germany), Benjamin Noack (Karlsruhe Institute of Technology (KIT), Germany), Uwe D. Hanebeck (Karlsruhe Institute of Technology & Karlsruhe Institute of Technology (KIT), Germany) 2430

- Isolating Random and Bias Covariances in Tracks

  Paul Miceli (Georgia Tech Research Institute, USA), William Dale Blair (Georgia Institute of Technology & Georgia Tech Research Institute, USA), Maxwell Brown (Georgia Tech Research Instiute, USA) 2437

9b - Point Process Methods/ PHD/ Multi-Bernoulli tracking

- A Distributed Bernoulli Filter Based on Likelihood Consensus with Adaptive Pruning

  Rene Repp (TU Wien, Austria), Giuseppe Papa (Science and Technology Organization - Centre for Maritime Research and Experimentation, Italy), Florian Meyer (Massachusetts Institute of Technology, USA), Paolo Braca (CMRE, Italy), Franz Hlawatsch (Vienna University of Technology, Austria) 2445

- An Implementation of the Poisson Multi-Bernoulli Mixture Trajectory Filter via Dual

Decomposition

Yuxuan Xia (Chalmers University of Technology, Sweden), Karl Granström (Chalmers University of Technology, Sweden), Lennart Svensson (Chalmers University, Sweden), Ángel F. García-Fernández (University of Liverpool, United Kingdom (Great Britain)) 2453

- A Heavy-Tailed Noise Tolerant Labeled Multi-Bernoulli Filter

  Wanying Zhang (Northwestern Polytechnical University, P.R. China), Feng Yang (Northwestern Polytechnical University, P.R. China), Liang Yan (Northwestern Polytechnical University, P.R. China), Zhentao Liu (Northwestern Polytechnical University, P.R. China) 2461

- Visual Mitosis Detection and Cell Tracking Using Labeled Multi-Bernoulli Filter

  Mohammed Imran Hossain (RMIT University, Australia), Amirali Khodadadian Gostar (RMIT University, Australia), Alireza Bab-Hadiashar (RMIT University, Australia), Reza Hoseinnezhad (RMIT University, Australia) 2468

- A Hierarchical LMB/PHD Filter for Multiple Groups of Targets with Coordinated Motions

  Léo Legrand (University of Bordeaux, France), Audrey Giremus (Université de Bordeaux, France), Eric J. Grivel (Université de Bordeaux, France), Laurent Ratton (Thales Inc., France), Bernard Joseph (Thales Airborne Systems, France), Clement Magnant (Thales, France) 2473

9c - Belief Functions

- Belief Function Definition for Ensemble Methods - Application to Pedestrian Detection in Dense Crowds

  Jennifer Vandoni (Paris-Sud University, France), Sylvie Le Hégarat (Paris Sud Orsay, France), Emanuel Aldea (Université Paris-Sud, France) 2481

- Learning-based Modelized Combination of Evidence

  Deqiang Han (Xi'an Jiaotong University, P.R. China), X. Rong Li (University of New Orleans, USA) 2489

- Rough Set Classifier Based on DSmT

  Yilin Dong (Southeast University, P.R. China), Xinde Li (Southeast University, P.R. China), Jean Dezert (Onera, France) 2497

- Study of Discounting Methods Applied to Canonical Decomposition of Belief Functions

  Romain Guyard (Université de Technologie de Compiègne, France), Véronique Cherfaoui (University of Technology of Compiegne, France) 2505

- Combination of Sources of Evidence with Distinct Frames of Discernment

  Yilin Dong (Southeast University, P.R. China), Xinde Li (Southeast University, P.R. China), Jean Dezert (Onera, France) 2513

9d - Decision Making

- Distributed Multi-Hypothesis Sequential Test for Tracking-Aided Target Classification

  Yongxin Gao (Xi'an Jiaotong University, P.R. China), X. Rong Li (University of New Orleans, USA), Xiaochen Chen (Xi'an Jiaotong University, P.R. China) 2521

- A New Method for OWA Aggregation of Interval Value in Multi-Criteria Decision Making

  Chan Huang (Northwestern Polytechnical University, P.R. China), Xinyang Deng (Northwestern Polytechnical University, P.R. China), Wen Jiang (Northwestern Polytechnical University, P.R. China), Zhunga Liu (Northwestern Polytechnical University, P.R. China) 2529

- A Sequential Game of Defense and Attack on an Interdependent System of Systems

  Fei He (Texas A&M University-Kingsville, USA), Chiamaka Agwuegbo (Texas A&M University-Kingsville, USA), Nageswara Rao (Oak Ridge National Laboratory, USA), Chris Yu Tak Ma (Hang Seng Management College, Hong Kong) 2535

- Path Planning in an Uncertain Environment Using Approximate Dynamic Programming Methods

  Adam Bienkowski (University of Connecticut, USA), David Sidoti (University of Connecticut, USA), Lingyi Zhang (University of Connecticut, USA), Charles Sampson (Naval Research Laboratory, USA), Jim Hansen (NRL, USA), Krishna R Pattipati (University of Connecticut, USA) 2542

9e - Algorithms for Tracking - Gaussian Processes, Gaussian Mixture Methods

- A Normal-Gamma Filter for Linear Systems with Heavy-Tailed Measurement Noise

  Le Zhang (Xi'an Jiaotong University, P.R. China), Jian Lan (Xi'an Jiaotong University, P.R. China), X. Rong Li (University of New Orleans, USA) 2548

- Efficient Pseudolinear Estimation for Bearings and Frequencies Target Motion Analysis

  Claude Jauffret (Université de Toulon, France), Annie-Claude Perez (Université de Toulon, France) 2556

- A Gaussian Mixture Smoother for Markovian Jump Linear Systems with non-Gaussian Noises

Yanbo Yang (Xidian University, P.R. China), Yuemei Qin (Northwestern Polytechnical University, P.R. China), Yanting Yang (Northwestern Polytechnical University, P.R. China), Quan Pan (Northwestern Polytechnical University, P.R. China), Zhi Li (Xidian University, P.R. China) 2564

- Enhanced GMM-based Filtering with Measurement Update Ordering and Innovation-based Pruning

  Xi Li (National University of Defense Technology, P.R. China), Le Yang (Jiangnan University & School of Internet of Things (IoT) Engineering, P.R. China), Lyudmila Mihaylova (University of Sheffield, United Kingdom (Great Britain)), Fucheng Guo (National University of Defense Technology, P.R. China), Zhang Min (National University of Defense Technology, P.R. China) 2572

- A Multi-Sensor, Gibbs Sampled, Implementation of the Multi-Bernoulli Poisson Filter

  Leonardo Cament (Universidad de Chile, Chile), Martin D Adams (University of Chile & Advanced Mining Technology Centre, Chile), Javier Correa Villanueva (Advanced Mining Technology Center & Universidad de Chile, Chile) 2580

9f - SS: Autonomous Driving

- Optimal Sensor Data Fusion Architecture for Object Detection in Adverse Weather Conditions

  Andreas Pfeuffer (Ulm University, Germany), Klaus Dietmayer (Ulm University, Germany) 2588

- Multi-Sensor Fusion and Active Perception for Autonomous Deep Space Navigation

  David Nakath (University of Bremen, Germany), Joachim Clemens (University of Bremen & Cognitive Neuroinformatics, Germany), Kerstin Schill (Universität Bremen, Germany) 2596

- Learning Switching Models for Abnormality Detection for Autonomous Driving

  Mohamad Baydoun (University of Genoa & Queen Mary University of London, Italy), Damian Campo (University of Genova, Italy), Valentina Sanguineti (University of Genoa, Italy), Lucio Marcenaro (Università degli Studi di Genova, Italy), Andrea Cavallaro (Queen Mary University of London, United Kingdom (Great Britain)), Carlo S Regazzoni (University of Genoa, Italy) 2606