2015 IEEE International Inter-Disciplinary Conference on Cognitive Methods in Situation Awareness and Decision Support

(CogSIMA 2015)

Orlando, Florida, USA 9-12 March 2015



IEEE Catalog Number: CH ISBN: 97

CFP15COH-POD 978-1-4799-8016-1

Program

2015 IEEE International Multi-Disciplinary Conference on Cognitive Methods in Situation Awareness and Decision Support (CogSIMA)

Human-Centric Situation Awareness

A Model-Driven Approach to the a Priori Estimation of Operator Workload Dhouha Kbaier Ben Ismail (IFREMER, REM/RDT/LSCM, France), Olivier Grisvard (Thales	1
Systèmes Aéroportés, France)	I
Kevin T Durkee (Aptima, Inc., USA), Scott Pappada (Aptima, Inc., USA), Andres Ortiz (Aptima, Inc., USA), John Feeney (Aptima, Inc., USA), Scott Galster (Air Force Research Laboratory, USA)	8
crowdSA - Towards Adaptive and Situation-Driven Crowd-Sensing for Disaster Situation Awareness	
Andrea Salfinger (Johannes Kepler University Linz, Austria), Werner Retschitzegger (Johannes Kepler University Linz, Austria), Wieland Schwinger (University of Linz, Austria), Birgit Pröll (Johannes Kepler University Linz, Austria)	14

Automated and Supervisory Control Systems

Shared UAV Enterprise Operator Pooling Framework (SUAVE) Chance Constrained Pooled Fan- out Queueing Analysis	
Lawrence A. M. Bush (Massachusetts Institute of Technology & Lincoln Laboratory, USA)	21
Expert-based Design and Evaluation of an Ambient Light Display to Improve Monitoring Performance During Multi-UAV Supervisory Control	
Florian Fortmann (OFFIS Institute for Information Technology, Germany), Heiko Müller (OFFIS - Institute for Information Technology, Germany), Andreas Lüdtke (OFFIS - Institute for Information Technology, Germany), Susanne Christine Johanna Boll (University of Oldenburg & Department for Computing Science, Germany)	_ 28
Applying a Priming Mechanism for Intention Recognition in Shared Control	
Benjamin Fonooni (Umea University, Sweden), Thomas Hellström (Umeå University, Sweden)	35

Situation Modeling and Assessment

Assessing Situation Models with a Lightweight Formal Method Vinicius M Sobral (Federal University of Espirito Santo, Brazil), Joao Paulo Almeida (Federal University of Espirito Santo, Brazil), Patricia Dockhorn Costa (Federal University of Espirito Santo, Brazil)	. 42
Multi-criteria Assessment of a Whole-of-Government Planning Methodology Using MYRIAD Daniel Lafond (Thales Canada, Canada), Jean-François Gagnon (Université Laval & Thales Canada, Canada), Sébastien Tremblay (Universite Laval, Canada), Natalia Derbentseva	
(Defence R&D Canada, Canada), Michel Lizotte (Defence R&D Canada, Canada)	. 49
Lab, USA), Lauren Reinerman-Jones (ACTIVE Lab, USA)	. 56

Poster Session

Model-driven Estimation of Operators' Workload for Usage Centred Design of Interactive Systems	
Dhouha Kbaier Ben Ismail (IFREMER, REM/RDT/LSCM, France), Olivier Grisvard (Thales Systèmes Aéroportés, France)	63
Automatic Derivation of Context Descriptions	
Christian Jung (Fraunhofer IESE, Germany), Denis Feth (Fraunhofer IESE, Germany), Yehia Elrakaiby (Fraunhofer IESE, Germany)	70
A Framework for Simulation-Based Task Analysis	
Anastasia Angelopoulou (University of Central Florida & Institute for Simulation and Training, USA), Konstantinos Mykoniatis (University of Central Florida, USA), Waldemar Karwowski (UCF, USA)	77
Supporting Common Ground Across Multiple Operator Perspectives	
Arthur Wollocko (Charles River Analytics, USA), Michael Farry (Charles River Analytics, Inc., USA), Martin Voshell (Charles River Analytics, USA), Michael P Jenkins (Charles River Analytics, USA), Michael Pellicano (US Army, USA)	82
The Effect of 2-dimensional and 3-dimensional Perspective View Displays on Situation Awareness During Command and Control	
Julie van der Meulen (Ergonomics Technologies, South Africa), Jan Ryno Smith (Ergonomics Technologies, South Africa)	89
Simple Event Correlator - Best Practices for Creating Scalable Configurations	
Risto Vaarandi (Tallinn University of Technology, Estonia), Bernhards Blumbergs (CERT-LV, Latvia), Emin Caliskan (TUBITAK, Turkey)	96
Sustaining Self-Regulation Processes in Seamless Learning Scenarios by Situation Awareness	
Giuseppe D'Aniello (University of Salerno, Italy), Matteo Gaeta (University of Salerno & Research Centre in Pure and Applied Mathematics, Italy), Antonio Granito (University of Salerno, Italy), Vincenzo Loia (University of Salerno, Italy), Francesco Orciuoli (Via Ponte don Melillo & MOMA S.p.A., Italy)	101
Knowledge Representation Artifacts for Use in Sensemaking Support Systems	
Jean Roy (DRDC, Defence Research and Development, Canada), Alexandre Bergeron Guyard (Defence R&D Canada – Valcartier, Canada)	106
Fidelity & Validity in Robotic Simulation	
Kathryn Schafer (University of Central Florida, USA), Tracy Sanders (University of Central Florida & Florida, USA), Theresa Kessler (University of Central Florida, USA), Mitchell Dunfe (Rollins College, USA), Tyler Wild (University of Central Florida, USA), Peter Hancock	
(University of Central Florida, USA)	113
A Collaborative Distributed Multi-Agent Reinforcement Learning Technique for Dynamic Agent Shortest Path Planning Via Selected Sub-goals in Complex Cluttered Environments	
Dalila B. Megherbi (Unversity of Massachusetts, Lowell, USA), Minsuk Kim (Center for Computer Machine Intelligence, Networking and Distributed Systems, USA)	118
Situation Awareness in Eco-Driving	
Serge Thill (University of Skövde, Sweden), Maria Riveiro (University of Skövde, Sweden)	125
A Network Science Approach to Future Human-Robot Interaction	
Kristin Schaefer (Army Research Laboratory, USA), Daniel Cassenti (US Army Research Laboratory, USA)	132
Automobility: The Coming Use of Fully-Automated On-Road Vehicles	
Peter Hancock (University of Central Florida, USA)	137
Describing and Reusing Warfighter Processes and Products: An Agile Training Framework	
Jeff Waters (SPAWAR Systems Center Pacific, USA), Bruce Plutchak (SPAWAR Systems Center Pacific, USA)	140

Simulated Network Effects on Tactical Operations on Decision Making Debbie Patton (Army Research Laboratory, USA), Laura Marusich (Army Research Laboratory, USA)	145
Risk-Driven Intent Assessment and Response Generation in Maritime Surveillance Operations	
Rafael Falcon (Larus Technologies Corporation, Canada), Rami Abielmona (Larus Technologies Corporation, Canada), Sean Billings (University of Ottawa, Canada)	151
Data to Decision: Pushing Situational Information Needs to the Edge of the Network Jürgo Preden (Tallinn University of Technology, Estonia), Jaanus Kaugerand (Tallinn University of Technology, Estonia), Erki Suurjaak (Tallinn University of Technology, Estonia), Sergei Astapov (Tallinn University of Technology, Estonia), Leo Motus (Estonian Academy of Science & Tallinn University of Technology, Estonia), Raido Pahtma (Tallinn University of	
Technology, Estonia)	158

Cyber Security and Threat Assessment

	ARSCA: A Computer Tool for Tracing the Cognitive Processes of Cyber-Attack Analysis	
	Chen Zhong (Pennsylvania State University, USA), John Yen (The Pennsylvania State University, USA), Peng Liu (Pennsylvania State University, USA), Robert F. Erbacher (US Army Research Laboratory, USA), Renee Etoty (Army Research Lab, USA), Christopher Garneau (Army Research Lab, USA)	. 165
1	Difficulty-Level Metric for Cyber Security Training	
	Zequn Huang (University of Delaware, USA), Chien-Chung Shen (University of Delaware & Department of Computer and Information Sciences, USA), Sheetal Doshi (Scalable Networking Technologies, USA), Nimmi Thomas (Scalable Network Technologies, Inc., USA), Ha Hoang Duong (Scalable Network Technologies, USA)	. 172
	Belief-based Hybrid Argumentation for Threat Assessment	
	Galina L. Rogova (University at Buffalo, USA), James Llinas (University at Buffalo, USA), Geoff Gross (Modus Operandi, USA)	. 179

Sensor Networks and Situation Awareness

Achieving Sink Node Anonymity Under Energy Constraints in Tactical Wireless Sensor Networks	
Audrey Callanan (United States Naval Academy, USA), Preetha Thulasiraman (Naval Postgraduate School, USA)	186
Energy Efficient Cross Layer Load Balancing in Tactical Multigateway Wireless Sensor Networks	
Kevin White (Naval Postgraduate School, USA), Preetha Thulasiraman (Naval Postgraduate School, USA)	193
Enhancing Decision-Making by Leveraging Human Intervention in Large-Scale Sensor Networks	
Enrico Casini (Florida Institute for Human & Machine Cognition, USA), Jessica Depree (Modus Operandi, USA), Niranjan Suri (Florida Institute for Human & Machine Cognition & US Army Research Laboratory, USA), Jeff Bradshaw (IHMC, USA), Teresa Nieten (Modus Operandi, Inc	
& University of Florida, USA)	200

Decision Support II

Decision Support in the Automated Future: An Analysis From the Rig Site	
Odd Erik Gundersen (Norwegian University of Science and Technology, Norway)	. 206

Ecological Display Symbology to Support Pilot Situational Awareness During Shipboard Operations Helicopter Aiding for Zero-Zero Landings with Advanced, Reactive Displays (HAZZARD) Michael P Jenkins (Charles River Analytics, USA), Christopher Hogan (Charles River Analyt

Michael P Jenkins (Charles River Analytics, USA), Christopher Hogan (Charles River Analytic	,
USA), Ryan Kilgore (Charles River Analytics, USA)	213
Combining Human Knowledge and Operational Data	
Jennifer Danczyk (Charles River Analytics, USA), Paula Jacobs (Charles River Analytics, USA	N),
Stephanie Dudzic (Charles River Analytics, USA), Michael Farry (Charles River Analytics, Inc	.,
USA), Wayne Thornton (Charles River Analytics, USA)	220