STIDS 2016

The Eleventh International Conference on
Semantic Technology for Intelligence, Defense, and Security

Semantics in the Internet of Things

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George Mason University
Fairfax, Virginia Campus

Conference Proceedings

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Preface

The Eleventh International Conference on Semantic Technology for Intelligence, Defense, and Security (STIDS 2016) provides a forum for academia, government, and industry to share the latest research on semantic technology for defense, intelligence, and security applications. Semantic technology is a fundamental enabler to achieve greater flexibility, precision, timeliness, and automation of analysis and response to rapidly evolving threats. The STIDS 2016 theme is Semantics in the Internet of Things. In addition, topics of general interest for STIDS include:

- Best practices in the engineering of ontologies
- Collaboration
- Command and Control (C2) and Situation Awareness (SA)
- Cyberspace: defense, exploitation, and counter-attack
- Decision making
- Economics and financial analysis
- Emergency response
- Human factors and usability issues related to semantic technologies
- Information sharing
- Infrastructure protection
- Intelligence collection, analysis, and dissemination
- Law and law enforcement
- Planning: representation of and reasoning over plans and processes
- Predictive analysis
- Provenance, source credibility, and evidential pedigree
- Resiliency, risk analysis, and vulnerability assessment
- Science and technology (biology, health, chemistry, engineering, etc.)
- Sensor systems
- Sociology (social networks, ethnicity, religion, culture, politics, etc.)
- Spatial and temporal phenomena and reasoning
- Uncertainty as it relates to ontologies and reasoning

Fairfax, VA
November 2016

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Michael Dean Best Paper Award

August 7, 1961 - November 19, 2014

The Michael Dean Best Paper Award was established in 2014 in recognition of Michael Dean's many and diverse contributions to the STIDS community. In selecting the winner, the committee sought to highlight the qualities that made Mike such an asset to this community. The criteria for selection exemplify the very best contributions to the conference and the community. To this end, the Michael Dean Best paper is the one that, in the judgment of the award committee, best satisfies the following criteria:

1. Conveys a clear, careful understanding of the problem or issue being addressed, and clearly states why it matters.

2. Conveys a thorough understanding of technical issues, and a well-grounded, pragmatic view of prior and related work.

3. Clearly identifies the specific semantic technologies being discussed, and their relationship to the problem.

4. Identifies specific experience or expertise on which the paper and its conclusions draw.

5. If a semantic system or application is being presented as part of a solution, clearly identifies and communicates the components of this system, including any ontologies, and how they interact, as well as their degree of actuality, availability, maturity and source.

6. Identifies whether and how such system/application/components have been evaluated and with what results.

7. Identifies outcomes, experiences, and lessons learned.

8. Demonstrates prioritization of greater technical and domain understanding and problem-solving over self-promotion, organizational promotion, partisan or programmatic scorekeeping, or other, narrower concerns.

9. Demonstrates knowledge of prior and current art, strengthens such knowledge in the community, and promotes better understanding by sharing the rationale for choices, especially when they diverge from common practice.

10. Demonstrates and strengthens the state of the art of semantic technology via the quality of the work described. Provides promising ways forward while negotiating known trade-offs and avoiding known pitfalls. Helps more junior technologists avoid repetition of old errors, and provides more senior technologists with new insights.

The winning paper was announced on the last day of the conference:

- *2016 Michael Dean Best Paper:* Michael Reep, Bo Yu, Duminda Wijesekera, Paulo Costa. Sharing Data under Genetic Privacy Laws.

- *Runner-up:* Frank Greitzer, Muhammad Imran, Justin Purl, Elise Axelrad, Yung Mei, Leong, D. E., Sunny Becker, Kathryn Laskey, Paul Sticha. Developing an Ontology for Individual and Organizational Sociotechnical Indicators of Insider Threat Risk.

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