

SEMANTIC TECHNOLOGY FOR
INTELLIGENCE, DEFENSE, AND SECURITY



STIDS2012

Semantic Technologies in Cyber Security

THE 7TH INTERNATIONAL CONFERENCE
ON SEMANTIC TECHNOLOGIES
OCTOBER 23 - 26, 2012

Mason Inn Conference Center
George Mason University
Fairfax, Virginia Campus

Conference Proceedings

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(Eds.)



Preface

The 7th International Conference on Semantic Technologies for Intelligence, Defense, and Security (STIDS 2012) 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. This year we have the following topics:

- Creating an interoperable suite of public-domain ontologies relevant to intelligence analysis covering diverse areas:
- Ontologies and reasoning under conditions of uncertainty
- Semantic technology and ontological issues related to:
 - Source credibility and evidential pedigree
 - Use of sensing devices including security, e.g. global infrastructure grid (GIG), images and intelligence collection in general
- Usability issues relating to semantic technology
- Best practices in ontological engineering

Fairfax, VA, October 2012.

Paulo Costa and Kathryn Laskey
STIDS 2012 Chairs

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KaDSci, LLC is small veteran owned company that was founded in 2008 with the goal of finding and providing solutions to the nation's and industries' most vexing decision related research, technology, and analysis challenges. Toward that end KaDSci has assembled a small highly skilled team of collaborating scientists from many disciplines as well as technically savvy and creative professionals with a passion for solving hard problems.

STIDS 2012 Keynote Speaker



Mike Dean

A Pragmatic View of the Semantic Web and Ontologies

Wednesday, October 24, 2012

Mike Dean is a Principal Engineer at Raytheon BBN Technologies where he's worked for 28 years in distributed computing, command and control applications, information assurance, and (since 2000) the Semantic Web. He was Principal Investigator for Integration and Transition in the DARPA Agent Markup Language (DAML) Program, which catalyzed the Semantic Web, and has served on W3C Working Groups for RDF, OWL, and RIF. He continues to develop, lead, or consult on the development of Semantic Web tools, ontologies, datasets, and applications for DoD, IC, and commercial customers. He holds a B.S. in Computer Engineering from Stanford University.

Abstract: I continue to be excited about the accomplishments and potential of the Semantic Web and related technologies. In this talk, I'll review some of those accomplishments, present some applications, discuss various emerging technologies (Wikidata, GeoSPARQL, SILK, PROV, ontology design patterns, Big Data, stream processing, etc.), identify some things that are still missing, and perhaps offer some predictions for the future.

STIDS 2012 Keynote Speaker



Jay Holcomb

An Insider Perspective of how Semantic Technologies are supporting the DHS efforts in Cybersecurity

Thursday, October 25, 2012

Jay Holcomb recently joined the Department of Homeland Security's National Protection & Programs Directorate (NPPD), Office of Cybersecurity and Communications (OC&C), Critical Infrastructure Cyber Protection and Awareness (CICPA) department. He is an internationally renowned expert in Cybersecurity and the Program Lead for Cyber Integration at the Control Systems Security Program/ICS-CERT. His presentation will bring an insider perspective of how Semantic Technologies are supporting the DHS efforts in Cybersecurity.

STIDS 2012 Best Paper Award

The Best Paper Award is meant to recognize the excellence of our technical program and contributors, as well as to promote the continuing efforts of our community to push forward the state of the art in Semantic Technologies for Intelligence, Defense, and Security.

The award was presented to the authors of the paper chosen by the STIDS 2012 awards committee as the best contribution appearing in the conference proceedings. Dr. Daniel Maxwell, President of KaDSci, Inc., announced the award at a special session on Thursday, October 25. The awardees received a check in the value of US\$450.

Best Paper Award Winner of STIDS 2012

Ontological Considerations for Uncertainty Propagation in High Level Information Fusion

by Mark Locher and Paulo Costa

Honorable Mentions

The following two papers also made it to the last phase of the selection process, and were both highly recommended by the award committee for an honorable mention as outstanding contributions to the conference (order is irrelevant):

Best-practice Time Point Ontology for Event Calculus-based Temporal Reasoning

by Robert Schrag

Using Ontologies in a Cognitive-Grounded System: Automatic Action Recognition in Video-Surveillance

by Alessandro Oltramari and Christian Lebiere