



NIST
National Institute of Standards and Technology



MARYLAND
ROBOTICS CENTER
THE INSTITUTE FOR SYSTEMS RESEARCH



PerMIS'12

Performance Metrics for Intelligent Systems Workshop

March 20-22, 2012

<http://www.nist.gov/mel/isd/permis2012.cfm/>

Call for Papers

The 2012 Performance Metrics for Intelligent Systems (PerMIS'12) Workshop will be the eleventh in a series of workshops dedicated to defining measures and methodologies of evaluating performance of intelligent systems. Started in 2000, the PerMIS series focuses on applications of performance measures to applied problems in commercial, industrial, homeland security, and military applications.

PerMIS'12 will focus on the **methodologies and techniques of performance measurement for developing and engineering the next generation of cyber physical systems that facilitate seamless human-machine collaboration**. In the context of the Workshop, Cyber Physical Systems (CPS) are taken to mean the "tight conjoining of and coordination between computational and physical resources" [National Science Foundation CPS Program Definition].

In relation to the main theme, topic areas include, but are not limited to:

- Defining, Measuring, and Engineering Capabilities of CPS:
 - Human-System Interaction, Collaboration and Coordination
 - Interoperability, Safety, Security, and Connectivity
 - Responsiveness, Reliability, Trustworthiness, Interchangeability, Durability
 - Portability, Mobility, and Scalability of Autonomous Systems
 - Levels of Autonomy
 - Predictable and cost-effective measurement science frameworks
- Evaluating Components within Intelligent Systems:
 - Sensing and Perception
 - Knowledge Representation, World Models, Ontologies
 - Planning and Control
 - Learning, Adapting and Reasoning
- Underlying Infrastructural Support for Performance Assessment:
 - Testing and Evaluation (including testbeds and competitions for inter-comparisons)
 - Instrumentation and Other Measurement Tools
 - Simulation and Modeling
- Technology Readiness Measures for Intelligent Systems
- Benchmarks and Applied Performance Measures and Metrics in Various Domains:
 - Manufacturing, Logistics, and Industrial Systems
 - Service: Domestic, Mining, Agriculture, ...
 - Intelligent Transportation Systems
 - Defense and Security
 - Emergency Response Robots (e.g. search and rescue, bomb disposal)
 - Intelligent Systems and Robots for Hazardous Environments (e.g. nuclear remediation)
 - Smart Grid
 - Space Robotics
 - Medical & Healthcare Systems and Devices

The Proceedings of PerMIS are indexed by INSPEC, Compendex, ACM Digital Library, and are released as a NIST Special Publication.

Submission Information

Prospective authors are requested to submit a full paper (max. 8 pages) or an extended abstract (1-2 pages) for review. *Special session* proposals can also be submitted as papers but should contain 1) a session title and a brief statement of purpose, 2) name and affiliation of the organizer(s), and 3) a preliminary list of speakers. All submissions must be written in English, starting with a succinct statement of the problem, the results achieved, their significance, and performance evaluation of the results. Papers are to be submitted at the workshop website using the specified templates.

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Location

UMD Inn and Conference Center

Sponsors

NIST, DARPA, UMD Robotics Center, ACM-SIGART, IEEE-RAS TC-PEBRAS, IEEE W/NV Sensors Council Chapter

Important Dates

Submission of full papers	November 14, 2011
Proposal for special sessions	November 14, 2011
Notification of acceptance	January 09, 2012
Final papers due	January 30, 2012