PerMIS'10
Performance Metrics for Intelligent Systems Workshop
September 28-30, 2010
http://www.nist.gov/mel/isd/permis2010.cfm/

National Institute of Standards and Technology

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Location
Hyatt Regency Baltimore

Sponsors
NIST, DARPA, NSF, ACM-SIGART, IEEE-RAS TC-PEBRAS, IEEE W/NV Sensors Council Chapter

Call for Papers

The 2010 Performance Metrics for Intelligent Systems workshop will be the tenth in a series 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'10 will emphasize the **key role of performance assessment in developing intelligent systems that can co-exist with humans** towards improving the quality of our lives intertwined with automation. Adaptability to human-centered collaboration, the ability to cope with unstructured, dynamic environments, and keeping humans out of harm's way have been widely accepted as critical prerequisites. Designing such flexible, smart, and safe systems requires that their performance be quantifiable thereby facilitating emerging technologies and societal acceptance.

Selected papers from PerMIS'10 will be considered for publication in a *special issue with the International Journal of Intelligent Control and Systems*. A National Science Foundation *Poster Session* is also being planned with travel support to undergraduate and graduate students. The Proceedings of PerMIS are indexed by INSPEC, Compendex, ACM Digital Library, and are released as a NIST Special Publication.

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

• Defining & Measuring Aspects and Capabilities of a Co-X (e.g. Co-Workers, Co-Inhabitants, …) System:
- Human-Robot Interaction, Collaboration and Coordination
- Mobility
- Responsiveness, Reliability, Trustworthiness, Interchangeability, Durability
- Variable Levels of Autonomy
- Taxonomies
- Biologically Inspired Models

• 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 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 for Hazardous Environments (e.g. nuclear remediation)
- Smart Grid
- Space Robotics
- Medical & Healthcare

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.

Important Dates

Submission of full papers	July 02, 2010
Proposal for special sessions	July 02, 2010
Notification of acceptance	July 30, 2010
Final papers due	August 27, 2010