SMC2014 BMI Workshop CALL FOR PAPERS

IEEE SMC 2014's 4th ***Workshop on Brain-Machine Interfaces Systems*** will be held October 5-7, 2014 at the luxurious Paradise Point Resort and Spa, 1404 Vacation Road, San Diego, located on a 44 acre private island of Mission Bay. SMC2014 is the flagship conference of the IEEE Systems, Man, and Cybernetics Society. It provides an international forum for researchers and practitioners to report up-to-the-minute innovations and developments, summarize state-of-the-art, and exchange ideas and advances in all aspects of systems science and engineering, human machine systems, and cybernetics.

Brain-Machine Interfaces (BMI) systems offer the possibility of a new generation of multidisciplinary technologies that allow users to directly control devices via the nervous system. The goal of this workshop is to facilitate the interaction and intellectual exchange between all developers and consumers of BMI technology. This international forum is a unique opportunity for the latest BMI advances, innovations, and applications to be reported. Of particular interest will be the definition of BMI metrics and the quantification of BMI performance for new and existing approaches, as well as the quantification of BMI-performance requirements for new, existing, and future BMI applications. The gaps revealed between these assessments represent both challenges to the field and tremendous opportunities for collaborative and multidisciplinary research, including the participation of peers who are not experts in the field of BMI, but have expertise in systems engineering, human-machine systems, and/or other disciplines that can advance the field. To support these goals, the BMI Workshop calls for papers on the technical topics listed below. Papers related to the following **BMI Workshop Theme** are encouraged:

Problems and Solutions in Building Real-World BMI Systems

This theme establishes a focus on practical applications of BMI theory and methodologies leading to tangible systems, products, and service technologies. As such, all submitted papers should include a section on how their topic can translate into practical applications of BMI. At the core of Brain-Machine-Interface systems is the coordination of sensing, computation, communication, control, and actuation of dynamic systems. Experts from many research areas within SMC and from outside are needed if reliable real-world BMI systems are ever to have significant and lasting impact on people. Advances in IEEE SMC's fields of interest as they relate to BMI are expected to empower future BMI systems to achieve this goal. This workshop will be of special interest to those experts in the topics listed below who are interested in learning how their research areas can be applied to solving of various research problems necessary for the development of real-world invasive and non-invasive BMI systems. Besides presentations of accepted papers, this 3 day workshop will feature panels, discussions with the audience, and a number of prominent invited speakers from industry and academia.

Systems Science & Engineering:
- Conflict Resolution
- Discrete Event Systems and Petri Nets
- Distributed Intelligent Systems
- Industrial Applications
- Intelligent Control Systems
- Medical Mechatronics
- Robotic and Autonomous Systems
- Self-Organized & Multiagent
- Sensor Systems
- Systems
- System of Systems Engineering
- System Modeling and Control
- Neuroscience Systems

Human-Machine Systems:
- Adjustable Autonomy
- Assistive Technology
- Brain-Machine Interface Systems
- Cognitive Computing and Architectures
- Cooperative Work in Design`
- Haptics and Teleoperation
- Human Centered Design
- Human-Computer Interaction
- Human-Machine System Design
- Human-Robot Interaction
- Kansei (sense/emotion) Engineering
- Smart Prosthetic/Orthotic Technology
- Teleoperators
- Systems Safety and Security
- Virtual and Augmented Reality Systems

Cybernetics:
- Agent-Based Modeling
- Awareness Computing
- Biometrics and Bioinformatics
- Computational Life Science
- Data & Information Fusion
- Granular Computing
- Information Assurance
- Intelligent Multimedia Comm.
- Knowledge Acq. in Intelligent Systems
- Knowledge-based Systems
- Machine Learning
- Machine Vision & Image Processing
- Medical Informatics
- Natural Language Processing
- Pattern Recognition
- Soft Computing

Important Dates

February 15, 2014: Deadline for proposals to organize BMI Workshop paper sessions and tutorials
April 7, 2014: Deadline for submission of full-length papers
May 25, 2014: Acceptance/Rejection notification
July 9, 2014: Final camera-ready papers due in electronic form.

BMI WORKSHOP CO-CHAIRS

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INVITED SPEAKERS

Jose Carmena,
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Robert T. Knight,
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Jose del R. Millán
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PANEL

How Research and Methodologies in Systems, Human-Machine Systems, and Cybernetics can be applied to BMI Systems

TUTORIAL SPEAKERS

TBA

http://www.smc2014.org/

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