Call for Papers: Special Issue on Stochastic Models, Control and Algorithms in Robotics

The focus of the proposed special issue is on mechanical systems in which the influence of stochastic processes cannot be ignored and needs to be anticipated, for example, presence of stochastic drifts, flexible or uncontrolled system components, human-in-the-loop uncertainty, propagated (estimation) uncertainty in dynamics or any lack of information resulting in a dynamic uncertainty that has to be anticipated. In all these cases, stochastic processes are essential either as a natural model for the uncertainty or as a model for a family of possible dynamic system evolutions.

We invite authors to submit original contributions with the focus on theory, applications, or both. The intent of the special issue is to bring and promote expertise in stochastic theory and algorithms with applications to:

- Models of stochastic uncertainties of robot design, sensors, actuators and operational environment in applications to a single, multiple-robot, wearable and bioinspired robotics systems, as well as human-robot interaction and intelligent vehicle systems;
- Control approaches that use the theory of stochastic processes, are based on stochastic models, or in which the presence of stochasticity is instrumental in reaching satisfactory robotic system performance; and
- Algorithms that benefit from the presence of stochasticity in the robotic system, or use computational statistical methods to solve stochastic and deterministic robotics-related problems, such as navigation, path planning, model identification, spatio-temporal estimation and adaptive environmental sampling.

Submission deadline: January 31, 2014

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