

Estimation of Hidden Markov Models for a Partially Observed Risk Sensitive Control Problem.

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Abstract: This paper provides a summary of our recent work on the problem of combined estimation and control of systems described by finite state, hidden Markov models. We establish the stochastic framework for the problem, formulate a separated control policy with risk-sensitive cost functional, describe an estimation scheme for the parameters of the hidden Markov model that describes the plant, and finally indicate how the combined estimation and control problem can be re-formulated in a framework that permits an application of stochastic approximation techniques to the proof of asymptotic convergence of the estimator.

Keywords:

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