

Title: Robust comparative statics with misspecified Bayesian learning

Speaker: Prof. Aniruddha Ghosh, California Polytechnic State University

Area: Economics

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Abstract:

We present novel monotone comparative statics results for steady state behavior in a dynamic optimization environment with misspecified Bayesian learning. We consider a generalized framework, based on Esponda and Pouzo (2021), wherein a Bayesian learner facing a dynamic optimization problem has a prior on a set of parameterized transition probability functions (models) but is misspecified in the sense that the true process is not within this set. In the steady state, the learner infers the model that best-fits the data generated by their actions, and in turn, their actions are optimally chosen given their inferred model. We characterize conditions on the primitives of the environment, and in particular, over the set of models under which the steady state distribution over states and actions and inferred models exhibit monotonic behavior. Further, we offer a new theorem on the existence of a steady state on the basis of a monotonicity argument. Lastly, we provide an upper bound on the cost of misspecification, again in terms of the primitives of the environment. We demonstrate the utility of our results for several environments of general interest, including forecasting models, dynamic effort-task, and optimal consumption-savings problems.

Speaker Profile:



Aniruddha Ghosh recently received Ph.D. in Economics from the Johns Hopkins University. His research interests are in microeconomic and statistical theory with a focus on model misspecification, social learning, and decision theory.

He will be joining the Department of Economics at the Orfalea College of Business at Cal Poly as an Assistant Professor in Fall 2024.

Webpage Link: <https://aniecon.github.io/>