November 20, 2023
2:00pm-3:00pm
KAP 414

Prof. Yuming Zhang
(Auburn University)

Convergence of Policy Iteration for Deterministic Control

Abstract: We study the convergence of policy iteration for (deterministic) optimal control problems. To overcome the problem of ill-posedness due to lack of regularity, we consider both discrete and semi-discrete schemes by adding a viscosity term via finite differences in space. We prove that PI for the schemes converges exponentially fast, and provide a bound on the error induced by the schemes. If time permits, I will also discuss the convergence of exploratory Hamilton--Jacobi--Bellman (HJB) equations arising from the entropy-regularized exploratory control problem. These are joint works with Wenpin Tang, Hung Tran and Xunyu Zhou.

Zoom Link: USC Math Finance Colloquium

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