

HKUST ECON Seminar

30 March, 2026, 3:00 – 4:30 pm

Deep Reinforcement Learning in a Monetary Model

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Abstract:

We propose deep reinforcement learning (DRL) as a general approach to bounded rationality in dynamic stochastic general equilibrium (DSGE) models. Agents are represented by deep artificial neural networks and learn to maximise their intertemporal objective function by interacting with an a priori unknown environment. Applying this approach to a model from the adaptive learning literature, DRL agents can learn all equilibria irrespective of local stability properties. However, learning is slow and may be unstable without the imposition of early stopping criteria. These findings can have implications for the use and interpretation of DRL agents and of DSGE models more generally.