Title: Rational Inattention and Endogenous Volatility: A Large Deviation Approach (joint work with Takashi Ui)

Abstract: Consider a game where rationally inattentive agents acquire costly information about an exogenous state and endogenous aggregate behavior. In a finite-agent game, endogenous volatility arises because individual behavior and aggregate behavior are conditionally correlated given the state. We define a large-game equilibrium as the limit of equilibria of finite-agent games with information acquisition as the number of agents approaches infinity. Our main results are: (i) Every large-game equilibrium exhibits no endogenous volatility, meaning that agents eventually learn only about the state and not about aggregate actions; (ii) The rate of convergence is such that the probability of aggregate actions deviating from the equilibrium aggregate actions decays exponentially in the number of agents. These results allow us to evaluate how accurately we can approximate games where agents can learn about both state and aggregate behavior by more tractable ones where agents learn only about state. Our proof uses large deviation theory because the law of large numbers is inapplicable when actions are correlated.