

Paper ID: IT-06**Nash Equilibrium Through the Lens of Fixed Point Theory****Invited Talk**

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Abstract

Nash equilibria are fixed points of best-response correspondences. This talk shows how Brouwer's and Kakutani's fixed point theorems establish the existence of Nash equilibria in strategic games. We illustrate this through three examples: Prisoner's Dilemma (pure strategy), Matching Pennies (mixed strategy), and Cournot duopoly (continuous strategy). Designed for PhD students and junior researchers, the talk connects nonlinear analysis to game-theoretic equilibrium via Nash's classical 1950–1951 proofs.

Keywords: Nash equilibrium, fixed point theory, Brouwer theorem, Kakutani theorem, game theory