Zuo Yang

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Department of Economics, National University of Singapore

EDUCATION

Ph.D. Economics, National University of Singapore	Aug 2020 – 2026 (expected)
MSc. Economics, National University of Singapore	Aug 2019 – July 2020
B.A. Economics, Huazhong University of Science and Technology	Sep 2014 – June 2018

WORKING PAPERS

Rational Strategic Behavior in Finite Models

Abstract: Rational behavior needs to be justified by rational beliefs (or types) in complex game situations. Such beliefs (or types) may be infinitely many, even in finite games. In this paper, we utilize the framework in Chen et al. (2015) to study rational behavior in game situations where players may have general preferences. First, we show that for any finite game there exists a finite-richness model that gives rise to the set of rationalizable strategies. Moreover, for any analytical model of a finite game, there exists a finite model that gives rise to the exact same rational behavior. In particular, the Iterated Elimination of Never Best Responses (IENBR) procedure in any type structure model can be implemented by a finite type structure model. Our constructive finite model provides clear and tractable foundations for theory and potential applications.

Backward Induction: A Characterization

Abstract: The main purpose of this paper is to provide a foundation for backward induction via the notion of future rationality (Perea 2014) in game environments. We formulate and show that "common knowledge of future rationality" (CKR^F) strategically implies subgame rationalizability in dynamic games. In doing so, this paper offers a foundation for backward induction: in the generic case of perfect-information games, CKR^F leads to the unique backward induction outcome. We also formulate an iterative backward induction procedure that gives rise to subgame rationalizability in dynamic games and prove its order independence.

Peer confirming equilibrium with Mutiple Networks

Abstract: We know close peers more accurately than complete strangers. Lipnowski and Sadler (2019) augment a game with a network to represent strategic information. We extend their framework by adding a network denoting players' knowledge about opponents' rationality: if two players are linked in the network, they know each other's rationality. Precisely, a finite game is paired with two undirected networks: a strategy-knowledge network listing whose strategies players know correctly, and a rationality-knowledge network listing whose rationality they are sure of. A peer-confirming equilibrium with multiple networks requires each player to best respond to a belief consistent with these networks, to be correct about neighbors' behavior, and to treat trusted neighbors as rational. For non-neighbors in the rationality-knowledge network, any strategies should be considered possible. This solution concept provides a useful language for studying various social situations.

TEACHING EXPERIENCE

Teaching Assistant, Department of Economics, National University of Singapore

EC6101 Advanced Microeconomic Theory (Ph.D. Course)	Spring 2024
EC3303 Financial Economics	Fall 2022
EC3342 International Finance	Spring 2023

Exam Grader, Department of Economics, National University of Singapore

SUMMER SCHOOL AND CONFERENCES

EPICENTER Summer Course in Epistemic Game Theory, Maastricht University	July 2024
Singapore Joint Economic Theory Workshop	Nov 2024
NUS Theory Lunch Workshop	

AWARDS AND SCHOLARSHIPS

Conference Funding For Graduate Students (SGD2,000), NUS	July 2024
Research Scholarship, NUS	2020-2024
Best Academic Performance in Core Modules (SGD5,000), NUS	Fall 2019

MISCELLANEOUS

Programming: Python

Languages: English, Chinese (Native)

Updated on Oct 16, 2025