# Zuo Yang

zyang@u.nus.edu | +65 91434342 | 1 Arts Link AS1 01-02, Singapore 117570

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. Rationalizability procedure can also be implemented by a finite type structure model.

**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*