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Fields of Concentration:

Microeconomic Theory
Game Theory
Matching Theory

Qualifying Examinations Completed:

Oral (2022): Microeconomic Theory, Industrial Organization
Written (2021): Microeconomics, Macroeconomics

Dissertation Title: *Essays on Matching with Incomplete Information*

Committee:

Professor Larry Samuelson (Chair)
Professor Philipp Strack
Professor Kai Hao Yang

Education:

Ph.D., Economics, Yale University, 2026 (expected)
M.Phil., Economics, Yale University, 2022
M.A., Economics, Yale University, 2021
B.Soc. Economics and Mathematics, National University of Singapore, 2019

Fellowships, Honors and Awards:

University Dissertation Fellowship, Yale University 2025-26
University Fellowship, Yale University 2020-26
Cowles Foundation Fellowship, Yale University 2020-25

Teaching Experience:

Yale College

Spring 2025, Teaching Assistant to Prof. Marina Halac, Game Theory ECON 159
Fall 2024, Teaching Assistant to Prof. Benjamin Polak, Game Theory ECON 159
Spring 2024, Teaching Assistant to Prof. Philipp Strack, Game Theory ECON 351
Fall 2023, Teaching Assistant to Prof. Evangelia Chalioti, Intermediate Micro ECON 121
Spring 2023, Teaching Assistant to Prof. Mira Frick, Intermediate Micro ECON 121
Fall 2022, Teaching Assistant to Prof. Joyee Deb and Prof. Benjamin Polak, Game Theory ECON 159

Research Experience:

Researcher under Prof. Yi-Chun Chen , National University of Singapore, 2019
Research Assistant, to Prof. Changcheng Song, National University of Singapore, 2017

Working Papers:

“Incomplete-Information Matching with Wage Schedules” (August 2025), *Job Market Paper*

“Efficiency of Stable Matchings under Two-Sided Incomplete Information” with Yi-Chun Chen (August 2025)

Work In Progress:

“Matching Priors” (August 2025)

Referee Service:

Games and Economic Behavior

Languages:

English (native)

References:

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Dissertation Abstract

Incomplete-Information Matching with Wage Schedules [Job Market Paper]

Matching models are central to economics and are used to study problems ranging from student-school assignment to worker-firm hiring. I study a one-to-one matching model with transferable utility. Traditional stability concepts assume static blocking pairs, that is, if a worker and firm who are currently apart would deviate from their respective allocation together, they do so with each other at some static wage. In practice however, incomplete information is often navigated by agents via the use of internships, tenure track positions, and other probationary terms. I show that by incorporating these dynamic elements into the definition of stability, we can sharpen our understanding of stable allocations under incomplete information. In particular, I introduce a notion of blocking with a *wage schedule*; a blocking pair is formed with the expectation that (i) agents in the blocking pair will learn each other's type during the initial probationary period, and (ii) the blocking wage in subsequent periods can adjust from that paid in the initial period, based on the learned types of the agents.

I first show that if at least one side of the market (e.g., firms) can commit to blocks, then incomplete-information and complete-information stability coincide. This implies that incomplete-information stable markets with strong labor laws or strong reputational incentives inherit properties of complete-information stability such as efficiency (ex-post surplus maximization) and equal treatment of equals. I also find that if commitment is not possible, but one side of the market deduces or can be informed of complete-information blocking opportunities, then incomplete information can be overcome. This suggests that in markets where sensitive information can be made available only to the hiring side, like the military or government agencies, complete-information stability can still be achieved.

I also address an existing sharp characterization of stable allocations. Even without dynamic elements, in the case where firms' productivities are public but workers' are not, Liu, Mailath, Postlewaite, and Samuelson (2014) show that stability implies efficiency, with one caveat: agents are assumed to be arbitrarily sophisticated, which may be less reasonable in some settings. When blocking pairs can accommodate wage schedules, however, I show that we can relax this assumption; the stability-efficiency coincidence is maintained even with agents who only have mutual knowledge of individual rationality. Notably, the previous conclusions hold even without sophisticated agents or supermodular preferences.

Efficiency of Stable Matchings with Incomplete Information, with Yi-Chun Chen

We study a one-to-one matching model with transferable utility under two-sided incomplete information. We uncover an asymmetry: stable matching outcomes must be efficient (ex post surplus-maximizing) when agents' preferences are submodular, but not necessarily when they are supermodular. The efficiency of incomplete-information stable matchings hinges on a condition we call *misassignment deduction*: for each potential blocking pair of a mismatch (a matching where the pair is inefficiently matched), at least one of the agents in the pair has worst-case hypotheses in which the pair is indeed mismatched. The misassignment deduction

condition always holds under submodular preferences, but may fail under supermodular preferences. We provide sufficient conditions under supermodular preferences that restore the misassignment deduction condition, and thus the stability–efficiency coincidence.