

CHIA-HAO CHANG

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<https://chia-hao-chang.github.io/>

EDUCATION

| | | |
|---|--------------------------|-----------------------------|
| Columbia University | New York City, NY | Sep 2020-present |
| <ul style="list-style-type: none">• Ph.D. in Operations Research• Advisor: Vineet Goyal• Graduate Coursework: Optimization (I) and (II), Stochastic Modeling (I) and (II), Analysis and Probability[♣], Probability (II)[♣], Convex Optimization, Matching Markets and Algorithms, Theoretical Statistics (I), Analysis of Algorithms (I), Game Theory• Tang's family fellowship. | | GPA: 4.06/4.00 |
| The University of Texas at Austin (UT Austin) | Austin, TX | Aug 2018 – May 2020 |
| <ul style="list-style-type: none">• M.S. in Decision, Info. and Commun. Engr. (DICE), Electrical and Computer Engineering (ECE)• Advisor: Prof. John Hasenbein and Prof. Thomas Wiseman• Thesis: Effects of Patient Heterogeneity in a First-Come-First-Serve Kidney Transplant Model | | GPA: 4.0/4.0 |
| National Taiwan University (NTU) | Taipei, Taiwan | Sept 2013 – Jan 2018 |
| <ul style="list-style-type: none">• B.S. in Electrical Engineering (EE) with minor in Physics (Phys)• NTU Presidential Award for 3 semesters: Awarded to students ranked within the top 5% in each semester. | | GPA:4.15/4.30 |

RESEARCH INTEREST

My research interest lies in the intersection of optimization, dynamic decision making, and game theory.

Dynamic Decision Making

- Stochastic Optimal Control and Stochastic Dynamic Programming
- Approximation of large scale Markov decision processes

Game Theory

- Learning in Games
- Inference in strategic settings

RESEARCH EXPERIENCE

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| Large Scale MDP | with Prof. Vineet Goyal | June 2021-present |
| <ul style="list-style-type: none">• Large Scale MDP model for proactive service in hospital. Characterize the structural properties in the associated fluid approximation.• Design an algorithm which coordinates the current resource and future demand. | | |
| Large Scale Game Solving | with Prof. Christian Kroer | Sep 2020 – Apr 2021 |
| <ul style="list-style-type: none">• Investigating the possibility of mirror descent to solve large Scale games, with variance reduction. | | |
| Game Theory | with Prof. Thomas Wiseman | June 2019 – Dec 2019 |
| <ul style="list-style-type: none">• Dynamic game model for staged financing; investigate the effects of signal structure on the associated perfect Bayesian equilibria. | | |
| Strategic Queues | with Prof. John Hasenbein | Jan 2019 – Dec 2019 |
| <ul style="list-style-type: none">• Game-theoretic queueing models for kidney transplantation; analyzed the parameter sensitivity in the MDP.• Presented at <i>INFORMS Annual Conference 2019</i>. | | |

TALKS

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| INFORMS Annual Conference 2019 | Seattle, WA | Oct 2019 |
| <ul style="list-style-type: none">• Session: WB11 - Queueing Approximations and Strategic Queues. | | |

[♣]: Math. Dept.: A+.

