

EDUCATION

Columbia University	Doctor of Philosophy	Sep 2020-May 2026 (expected)
<ul style="list-style-type: none"> • Ph.D. in Operations Research • Advisor: Vineet Goyal and Carri Chan 		GPA: 4.08/4.00
The University of Texas at Austin	Master of Science	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 • Thesis: Effects of Patient Heterogeneity in a First-Come-First-Serve Kidney Transplant Model 		GPA: 4.0/4.0
National Taiwan University (NTU)	Bachelor of Science	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

CODING SKILLS

1. **Python:** Familiar with **Numpy, SciPy, Matplotlib, Pandas, Statsmodels, Sklearn.**
 - (a) **Monte-Carlo Simulation** of large-scale Markov chain with numpy and scipy. Performed **data cleaning, validation, and linear model estimation** on a dataset of **1 million+** patient records using Pandas and Statsmodels.
2. **C++:** Familiar with STL library.
 - (a) Finite-difference method for shock wave **physics simulation**; CodeForces *Specialist*.

RELEVANT COURSEWORK & RESEARCH INTEREST

RELEVANT COURSEWORK:

- **Probability & Statistics:** Analysis and Probability, Probability (II), Theoretical Statistics (I), Theoretical Statistics (II), Stochastic Simulation, Stochastic Modeling I & II. High Dimensional Probability.
- **Optimization:** Convex Optimization, Optimization I & II, Analysis of Algorithms, Game Theory.

RESEARCH INTEREST:

1. **Sequential Decision Making under Uncertainty:** Stochastic Optimal Control, Approximation of large scale Markov decision processes (MDP), resource allocation in dynamic large-scale environment, Design scalable policies for large scale dynamic optimization

PUBLICATION, RESEARCH & DATA SCIENCE PROJECTS

Large Scale MDP	Operations Research	Theory & Data Science
<ul style="list-style-type: none"> • <i>Rapid Response Teams for Proactive Sepsis Treatment</i>, major revision at Operations Research (joint with Carri Chan, Vineet Goyal and Benjamin Ranard). • SSRN preprint: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5205758 • Large Scale MDP model for stochastically scheduling proactive treatment in hospital. Characterize the structural properties of the optimal policy in the associated fluid optimization problem. • Design an algorithm coordinating the current resource and future demand to balance the proactive vs reactive tradeoff; Novel discrete-time argument to prove the algorithm is asymptotically long-run optimal. • Calibrated model using real-world data from 400K+ patient records. Good Performance on the real-world data. 		
Causal Effect Estimation	Annals of Emergency Med.	Data Science
<ul style="list-style-type: none"> • <i>Evaluating the Impact of a Sepsis Navigator Program: Evidence from a Difference-in-Differences Analysis</i>, to be submitted to Annals of Emergency Medicine (joint with Carri Chan, Vineet Goyal, Benjamin Ranard, Hassan Mohamed, Monisha Diip). • Causal inference to evaluate the impact of a clinical screening system at NewYork-Presbyterian Hospital. • Difference-in-Differences (DiD) methodology to estimate treatment effects. • Performed large-scale data cleaning, transformation, and validation comprising one million+ patient records. 		

AWARDS

1. Tang's family fellowship.
2. Taiwan International Physics Olympiad Selection: 2nd round 2012
3. Taiwan High School Physics Competition: Winner and Kaohsiung City Representative 2012

TEACHING EXPERIENCE

Teaching Assistant

Columbia University

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| • IEOR 6711: Stochastic Modeling (I) (Ph.D. core) | 2022, 2025. |
| • IEOR 4106: Stochastic Models | 2021, 2023, 2025 |
| • IEOR 4102: Stochastic Modeling for MSE | 2021, 2024 |
| • IEOR 4150: Probability, Statistics and Simulation | 2024 |
| • IEOR 3609: Advanced Optimization | 2022 |
| • IEOR 3658: Probability for Engineers | 2023 |

TALKS

INFORMS

1. INFORMS 2024: Session: TE48 - Public Health Analytics and Operations
2. INFORMS MSOM 2024: Session: MD14 - Healthcare Analytics and Modeling
3. INFORMS 2023: Session: SE27 - Recent Advancement of Stochastic Modeling for Service Systems
4. INFORMS Healthcare 2023: Session: FA05 - Innovative Models in Healthcare
5. INFORMS 2022: Session: SA45 - Topics in Sequential Models Under Uncertainty
6. INFORMS 2019: Session: WB11 - Queueing Approximations and Strategic Queues.