

# Peter M. Tian

Department of ORFE  
Princeton University

ptian@princeton.edu  
(614) 805-7161

4118 Maystar Way  
Hilliard, OH 43026

## Education

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### PRINCETON UNIVERSITY

PhD. Student in Operations Research and Financial Engineering; GPA: 3.98/4.0

**Gordon Wu Fellowship**

Princeton, NJ

Sept 2019-May 2023

### PhD Research

Mentor: Professor Jason Klusowski

Research topics: Decision Tree Learning, Deep learning, and Reinforcement Learning

### HARVARD UNIVERSITY

BA in Mathematics; GPA: 3.94/4.0; GRE: 166V, 170Q, 5.0W, Math Sub 960 (99th percentile)

**Magna Cum Laude, John Harvard Scholar, The Detur Book Prize**

Cambridge, MA

Aug 2015-May 2019

### Honors Thesis

Mentor: Professor Yum-Tong Siu

Research topic: Nash-Moser theory and its applications

## Experience

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### Two Sigma Investments

Quantitative Research Intern

Mentor: Taylor Ma

Research topic: Systematic alpha modeling based on fundamental similarity

New York, NY

May 2022-August 2022

### Jane Street Capital

Quantitative Trading Intern

Mentors: Geoff Beck and Travis Arffa

Research topic: High-frequency model for bid-ask spreads and Monte Carlo simulations to price American options

New York, NY

June 2021-August 2021

### Five Rings Capital, LLC

Quantitative Trading Intern

Mentor: Derek Hardin

Research topic: High frequency mean reversion strategies for illiquid contracts

New York, NY

June 2020-August 2020

### AQR Capital Management

Research Summer Analyst

Mentor: JohnPaul Kotyla

Research topic: Systematic alpha modeling based on intraday momentum

Greenwich, CT

June 2018-Aug 2018

### Geode Capital Management, LLC

Quantitative Research Intern

Mentor: Dr. Victor Liu

Research topic: Systematic alpha modeling based on natural language processing of financial reports

Boston, MA

June 2017-August 2017

### Research Experience for Undergraduates, UMD

Research Intern

Mentor: Professor William Gasarch

Research topic: Generating functions in loaded dice problems

College Park, MD

June 2016-August 2016

## **PRIMES-USA, MIT**

Research Intern

Mentor: Dr. Jesse Geneson

Research topic: Pattern avoidance in multidimensional matrices

Cambridge, MA  
Dec 2013-May 2015

## **Research Science Institute (RSI), MIT**

Research Intern

Mentor: Dr. Jesse Geneson

Research topic: Pattern avoidance in multidimensional matrices

Cambridge, MA  
June 2014-Aug 2014

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## **Honors and Awards**

Siemens Competition Individual Grand Prize (\$100,000 scholarship) (2014)

Davidson Fellow (\$25,000 scholarship) (2015)

Research Science Institute (RSI) Scholar (2014)

Mathematical Olympiad Summer Program (MOSP) Attendee (2013)

Four-time USA Mathematical Olympiad (USAMO) Qualifier (2012-2015)

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## **Selected Publications**

M. Cattaneo, J. Klusowski, P. Tian, **On the Pointwise Behavior of Recursive Partitioning and Its Implications for Heterogeneous Causal Effect Estimation**, submitted (2022) (preprint will be provided upon request).

J. Klusowski, P. Tian, **Large Scale Prediction with Decision Trees**, Journal of the American Statistical Association (JASA), accepted (2022) [https://jasonklusowski.github.io/files/cart\\_adapt.pdf](https://jasonklusowski.github.io/files/cart_adapt.pdf)

J. Klusowski, P. Tian, **Nonparametric Variable Selection with Optimal Decision Stumps**, Proceedings of the 24th International Conference on Artificial Intelligence and Statistics (AISTATS), PMLR 130:748-756 (2021)  
<http://proceedings.mlr.press/v130/klusowski21a/klusowski21a.pdf>

J. Geneson, P. Tian, **Extremal Functions of Forbidden Multidimensional Matrices**, Discrete Math. 340 (12) (2017), 2769-2781 <http://www.sciencedirect.com/science/article/pii/S0012365X17302753>

I. Smith, Z. Smith, P. Tian, **Symmetric Chromatic Polynomial of Trees**, arXiv preprint arXiv:1505.01889 (2015)  
<https://arxiv.org/abs/1505.01889>

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## **Programming**

**Languages:** Python, R, MATLAB, Java, C, C++, SQL, OCaml

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## **Relevant Coursework**

### **At Princeton:**

Special Topics in Deep Learning, Advanced Natural Language Processing, Foundations of Reinforcement Learning, Statistical Analysis of Financial Data, Linear and Nonlinear Optimization, Convex and Conic Optimization, Statistical Theory and Methods, Statistical Foundations of Data Science, Probability Theory, Stochastic Calculus

### **At Harvard:**

**Mathematics:** Math 55A/B (Honors Abstract Algebra and Real and Complex Analysis), Analysis II, Graduate Real Analysis, Graduate Advanced Complex Analysis, Algebra II, Topology I, Topology II, Number Fields, Dynamical Systems, Ordinary and Partial Differential Equations

**Statistics:** Intro to Probability, Graduate Probability I, Graduate Probability II, Linear Models, Graduate Linear and Generalized Linear Models, Intro to Stochastic Processes, Intro to Statistical Inference, Applied Quantitative Finance

**Computer Science:** Graduate High Dimensional Probability, Machine Learning, Data Structures and Algorithms, Systems Programming and Machine Organization, Intro to Computer Science II