

# TIN NGUYEN

<https://www.linkedin.com/in/tin-nguyen-879896125/> ◇ <https://tinnguyen96.github.io/>

## WORK EXPERIENCE

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### Quantbot Technologies, LP

*Quantitative Researcher*

June 2024 - present  
New York, NY

- Develop, deploy, and monitor systematic trading strategies.

### Massachusetts Institute of Technology

*Research Assistant*

August 2018 - May 2024  
Cambridge, MA

- Improved the runtime of Markov chain Monte Carlo algorithms for Bayesian clustering models without sacrificing accuracy.
- Derived fast and accurate approximations for Bayesian nonparametric models used in unsupervised learning.
- Detected influential data points whose omission significantly change the posterior distribution of Bayesian parametric models.

## INTERNSHIPS

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### Quantbot Technologies, LP

*Intern*

May 2023 - August 2023  
New York, NY

- Prototyped a reinforcement-learning-based approach to dynamically switch between expert systems.
- Designed machine learning algorithms to measure feature importance and discover feature interactions.
- Showed through backtests that important features and feature interactions add value to existing trading strategies.

### IBM Research

*Research Intern*

June 2019 - August 2019 & June 2022 - August 2022  
Cambridge, MA

- Designed approximate leave-one-out cross-validation in hidden Markov models and conditional random fields.
- Reduced the runtime by 2 orders of magnitude, while giving highly accurate estimate of cross-validation error metric.
- Constructed hypothesis test to determine if a parametric specification contains the data-generating process.
- Applied test to features learned from multi-layer perceptron and convolutional neural networks.

## EDUCATION

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### Massachusetts Institute of Technology

*Doctor of Philosophy in Electrical Engineering and Computer Science*

August 2018 - May 2024  
Cambridge, MA

- Thesis: Toward Faster Methods in Bayesian Unsupervised Learning.
- Completed en route Master's degree in June 2020.
- Coursework: Bayesian Modeling and Inference, Automatic Speech Recognition.

### Princeton University

*Bachelor of Science in Engineering in Operations Research and Financial Engineering*

August 2014 - May 2018  
Princeton, NJ

- Thesis: Novel results on computational methods for polynomial optimization.
- Coursework: Machine Learning and Pattern Recognition, Neural Networks: Theory and Applications.

## SKILLS

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**Statistics** Generalized linear models, Bayesian inference, hypothesis testing, bootstrap, Markov chain Monte Carlo.

**Machine Learning** Tree-based models, neural networks, Gaussian processes, Bayesian nonparametrics, clustering, factor analysis.

**Operations Research** Linear programming, convex optimization, queuing theory, stochastic processes, Black-Scholes formula.

**Software** Python (scikit-learn, pandas, matplotlib, pytorch), R (ggplot2, lme4, stan, dplyr), slurm, sge, bash.

**Technical Communication** Peer-reviewed publications, technical reports, conference posters, conference presentations.

## OTHER

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**Fellowships** MIT EECS Great Educators Fellow (2018).

**Presentations** Oral presentation at the 25th International Conference on Artificial Intelligence and Statistics (AISTATS) on "Many Processors, Little Time: MCMC for partitions via optimal transport couplings."

**Memberships** Inducted to Tau Beta Pi (2017).

**Theses** Proctor and Gamble Prize for best thesis in Operations Research (2018). Calvin Dodd McCracken Senior Thesis Award.