

KA HEI MICHAEL CHU

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EDUCATION

NEW YORK UNIVERSITY

New York, NY

The Courant Institute of Mathematical Sciences

M.S. in Mathematics in Finance (expected December 2021)

- **Coursework:** Black-Scholes, mean-variance analysis, volatility modelling, quantitative portfolio theory, stochastic calculus, interest rate modelling

UNIVERSITY OF CALIFORNIA, DAVIS

Davis, California

B.S. in Mathematical Analytics and Operations Research & B.A. in Economics (June 2020)

- **Coursework:** markov process, martingales, convex and discrete optimization, machine learning, numerical integration; econometrics on panel data, game theory, ARIMA, GARCH
- **Awards:** High Honors in Mathematics, Honors in Economics; recipient of G. Thomas Sallee Prize Honorable Mention in 2019 (undergraduate Mathematics competition)

EXPERIENCE

UNIVERSITY OF CALIFORNIA, DAVIS

Davis, CA

Undergraduate Research Assistant (July 2019 - June 2020)

- Trained feed-forward and recurrent neural networks using Tensorflow in Python to perform binary classification on 9 and 20-vertices graphs, achieving up to 95% test accuracy
- Regularized feed-forward and recurrent neural networks with dropout, L1/L2 penalties and cross-validation to combat overfitting and improve model performance
- Generated and analyzed a Mathematical library of a billion simple undirected graphs with up to 20 vertices using Python, MATLAB and CDD as training and testing data for neural networks

Student Tutor (November 2018 - March 2019)

- Tutored undergraduate students in calculus and intermediate macro/microeconomics
- Maintained records of performance and wellbeing for students with special needs

PROJECTS

NEW YORK UNIVERSITY

New York, NY

Python Project: Monte-Carlo on Synthetic CDO Pricing

- Utilized Monte-Carlo method to simulate CDS defaults and estimate the present values of a CDOs
- Implemented and compared the performance of variance reduction techniques for Monte-Carlo, such as importance sampling and low-discrepancy sequences

Paper Replication Project: Portfolio from Sorts by Almgren & Chriss

- Implemented portfolio optimization algorithm using only ordering information of stock returns
- Evaluated the performance of algorithm suggested by the authors with ad-hoc alternatives

UNIVERSITY OF CALIFORNIA, DAVIS

Davis, CA

STATA Project: Econometric Analysis on Telephone Usage in Louisville, KY

- Performed Regression Analysis on STATA to analyze heterogeneity of telephone usage habits among different races in Louisville, Kentucky

COMPUTATIONAL SKILLS/OTHER

Programming Languages: Python, Java, MATLAB, C, R and STATA

Languages: English (fluent), Mandarin (proficient), Cantonese (native)