# Tianwei Zhao

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## EDUCATION

Bachelor of Science, **University of California Santa Barbara** Jul. 2016 – 2020

- **Major:** Financial Mathematics and Statistics
- **GPA:** 3.47/4.00
- **Courses:** Calculus, Linear Algebra, Vector Calculus, Transition to Higher Mathematics, Methods of Analysis, Introduction to Numerical Analysis, Numerical Analysis, Advanced Numerical Analysis
- Dean's Honors for Fall 2017

Master of Science, **Columbia University** Sep.2021–now

- **Major:** Biostatistics Theory and Method Track

## PROJECTS

Financial Analytic Workshop, **Morgan Stanley China** Aug. 2019 – Sep. 2019

**Supervisor:** Jude Wen, Vice President, Morgan Stanley Capital International

- Warmed-up with random data sampling, investigation, and T-distribution verification using R
- Developed VAR model for the portfolio, and then conducted Monte-Carlo Simulation to hedge risks
- Worked on option pricing for European Option and American Option in MATLAB, referred to literature in modeling, grasped the differences, and implemented Newton-Raphson Method
- Made predictions on the option price and transaction risk with the Monte Carlo simulation based on Excel, sampled based on the given distribution, established the estimators, and assisted investment in uncertainty conditions
- Referred to the Specific Quantitative Strategy in literature, and then calculated daily return and leverage ratio based on 700 groups of market data, including total liability, total shareholders liability, debt-to-equality-ratio
- Explored the financial market, got access to financial derivatives, and implemented data analytical skills in financial field

**Regression Analysis of CDI Dataset** May.2019 – June 2019

- Plotted raw data about physicians in a county and, identified predictors, including total population, land area, and the income, and then fitted a rough model
- Verified the linear assumptions with diagnostic check, and used log transformation
- Conducted significance tests, determined confidence intervals, and got 0.834 in R-squared test
- Identified a decreasing trend in variances in residuals plot, and then checked with bp-test

**Wave Equation based on Finite Difference Method** May.2019 – June 2019

- Calculated stability conditions by explicit finite difference method and determined the order of wave equation by Taylor expansion.
- Implemented the method for the open pipe, and then plotted the numerical solution in Python.
- Applied extrapolating numerical solution in a higher-order approximation to decide the order
- Identified the choice of higher order approximation based on accuracy

## ACTIVITIES

Chairman, The Movie Club, Chinese Students and Scholars Association, UCSB Sep. 2019 – Present

- Worked as the director and actor in plays

Graduation Staff Leader, **UCSB** Jun. 2018

- Worked on graduation planning and event management for the commencement

Membership, **Statistics and Accounting Association** Sep.2018 – Present

## COMPUTER SKILLS

Python, MATLAB, R, SAS

## HOBBIES

Fitness, Basketball, I-go, Guitar, Traveling,Youtuber