

# TAOYING ZHAO

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## EDUCATION

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- Expected 12/24 **NEW YORK UNIVERSITY** New York, NY  
**The Courant Institute of Mathematical Sciences**  
**M.S. in Mathematics in Finance**
- **Expected Coursework:** risk and portfolio management, stochastic calculus, Fama-French, Black-Scholes, Hull-White model, portfolio optimization, algorithmic trading, penalized regression, Ito's lemma, risk-neutral valuation
- 08/18 - 06/23 **UNIVERSITY OF CALIFORNIA, SAN DIEGO** La Jolla, CA  
**Bachelor of Science in Mathematics, Bachelor of Science in Psychology/Social Psychology**
- **Undergraduate Coursework:** Discrete mathematics, abstract algebra, algebraic topology, ODE analysis, probability, stochastic process
  - **Graduate Coursework:** Real analysis (abstract measure and integration theory; linear functionals; Lebesgue spaces; Fourier analysis); PDE analysis (heat equations; Hamilton-Jacobi theory; linear elliptic, parabolic, hyperbolic equations; Monge-Ampère equation)
  - **Psychology Coursework:** judgment and decision-making, game theory, behavioral economics, social cognition
  - **Computer Science Coursework:** OO programming (Java), algorithms, data structures, computer organization and systems programming

## EXPERIENCE

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- 09/21 - 06/23 **DEPARTMENT OF MATHEMATICS, UCSD** La Jolla, CA  
**Teaching Assistant and Grader**
- Reinforced students' learning of fundamental knowledge and problem solving skills for multivariable calculus through weekly discussion sessions and office hours
  - Built strong working relationships with 100 students (as TA, rated 10 of 10 by 2 professors)
  - Provided timely and detailed feedback on homework for honors multivariable calculus, honors linear algebra, and abstract algebra (as grader, rated 10 of 10 by 3 professors)
- 07/19 - 08/19 **CHINA CITIC BANK** Chengdu, Sichuan China  
**Information Technology Intern (Java, SQL Server, HTML)**
- Collaborated on web projects' entire development cycles; developed over 1K lines of code
  - Constructed SQL server database, designing tables that suited management system requirements and MyBaits structure, transferring necessary data from other databases
  - Implemented back-end with SQL read and write in Java
  - Constructed verification code function with bank SMS service on sign-up page

## PROJECTS

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- 04/22 - Present **UCSD COGNITIVE DEVELOPMENT LAB** La Jolla, CA  
**PLeaSE - Probability Learning in Social Environments (Python, JavaScript)**
- Led PLeaSE project team; designed and trained avatars' strategies for experiment, using reinforcement learning model via Python for avatars to simulate real-people actions
  - Maintained project's online platform in JavaScript; standardizing source code
- 10/20 - 03/21 **Analysis of Redistribution Trends of California (R)** La Jolla, CA
- Collected and cleaned data about redistribution, including GINI coefficients and all propositions' yearly results for all California counties
  - Implemented models via principal component analysis and linear regression, exploring multiple factors influencing propositions' votes; visualized result of models

## COMPUTATIONAL SKILLS / OTHER

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**Programming Languages:** Java, Python, C, MATLAB; SQL server; R; Bash Shell Script, Java Script, HTML  
**Languages:** English (fluent), Mandarin (native)