Minxing Xu

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Education

University of California, Santa Barbara — Santa Barbara, CA

Master of Science in Electrical and Computer Engineering (Signal Processing) — *Sept. 2025 – July 2026*

Master of Art in Statistics (Mathematical Statistics Specialization) — *Jan. 2025 – July 2026*

- *GPA: 3.95/4.0*

Bachelor of Science in Statistics & Data Science — *Sept. 2022 – Dec. 2024*

- *GPA: 3.89/4.0 (High Honor, top 8.5%)*

Experience

Teaching Assistance | *University of California, Santa Barbara* — *Aug. 2024 – Present*

- Hold teaching sections 4 times a week for undergraduate students in PSTAT 8 (Transition to Data Science, Probability and Statistics) , PSTAT 10 (Data Science Principles) , PSTAT 122 (Design of Experiment).
- Conducted weekly office hours and tutorials for 150 students, enhancing their understanding of core concepts.
- Graded homework and exams, providing detailed feedback to professors on student performance.

Business Intelligence Engineer | *Motion Global* — *Mar. 2024 – May 2024*

- Supported semantic classification of consumer feedback to classify areas for improvement.
- Implemented daily data updates to dashboards by integrating Amazon QuickSight with other platforms for real-time business insights.

Data Analyst | *TF Securities Co. Ltd* — *July 2023 – Sep. 2023*

- Developed risk alert system to track financing and securities lending, stock pledge repos, and securities borrowing by incorporating metrics like credit exposure, asset deterioration rates, and asset limits to support real-time alerts.
- Deployed real-time data extraction, visualization and threshold-based alerts interactive system, improving risk oversight and daily operational responsiveness.

Research

Flow Models for PDE Solution under Uncertainty | *Prof. Xuhui Meng* — *June 2025 – Present*

- Developed a variational inference framework using flow matching techniques to solve partial differential equations (PDEs) in scientific computing contexts.
- Designed neural ODE-based generative models to sample solution fields satisfying complex PDE constraints.

High-Frequency Bond Futures Yield Modeling | *Prof. Gareth Peters* — *Mar. 2025 – Present*

- Modeled bond-futures price by incorporating accurate bond yield forecasts to a high-frequency CCC-HAR factor model, capturing the dynamic covariance structure and multi-scale volatility of bond-futures price.
- Incorporated a HAR specification to model daily, weekly, monthly and quarterly realized volatilities, effectively highlighting the heterogeneity and long-memory properties of the return series.

Dynamic Bond Ladder Investment Decision Making | *Prof. Gareth Peters* — *Sep. 2024 – July. 2025*

- Bootstrap Treasury bond data using penalized splines and fitted a Kalman Filter based on the Dynamic Nelson-Siegel model with volatility adjustments, applying non-convex optimization for robust parameter estimation and improved yield curve forecasting.
- Develop optimal stopping mechanism for callable bond ladder portfolios, using the forecasted yield curve to identify multiple exercise opportunities and enhance fixed-income reinvestment strategies.

Professional Skills

Programming

- Proficient in Python, Java, R, SQL, Excel and LATEX.
- Familiar with HTML, JavaScript, and SAS.

Database Management

- Experienced with relational database systems including MySQL, Oracle, PostgreSQL, and SQLite
- Skilled in Amazon cloud database management system such as Redshift

DevOps & Deployment

- Knowledge of Docker for environment configuration and containerized application deployment
- Proficient in using Git and GitHub for version control, branching strategies, and code collaboration