

Zimu (Tim) Zhou

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EDUCATION

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| New York University M.S. <i>Data Science</i> , GPA: 3.89 New York University B.A. <i>Mathematics with High Honors</i> , GPA: 3.78 (<i>Cum Laude</i>) Coursework: ML (<i>Energy-Based GANs, CNN</i>) Applied Statistics (<i>GLM, Fourier and Wavelet</i>) | New York, NY Sept. 2024- May 2026 New York, NY Sept. 2021- May 2024 |
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SKILLS & RELEVANT EXAMS

- **Skills:** Python (*np, pd, plt, XGBoost, Torch, Xarray, TensorFlow*), SQL, R, Azure, AWS, Git, MS Suite, Tableau
- **Passed Actuarial Exams:** P (Probability), SRM (Statistics for Risk Modelling)

PROFESSIONAL EXPERIENCES

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| Machine Learning Engineer Intern, AutoNavi Software Co., Ltd • <i>Client Branch Store Sales Prediction:</i> Employed XGBoost to build regression tree models to predict the sales of client's new branch stores with 90% of predictions within $\pm 20\%$ of actual values. • <i>Branch Store Site Selection:</i> Exploited DBSCAN clustering to extract key characteristics of high-volume stores and used cosine similarity to locate similar customer regions. • <i>Faculty/Students Classification:</i> Utilized XGB multi-classification tree to differentiate among 10M+ faculties, students, and other people based on their daily routes, running on cloud computing platform . • <i>Branch Store Road Match:</i> Developed a MySQL ETL script to match the client's branch stores with nearby segmented roads from electronic map grids. • <i>Trade Area Determination:</i> Built a SQL pipeline to determine the primary trade area of 150+ branch stores based on the matched surrounding roads, employing custom Python functions utility for data transformation. | Beijing, June- August 2024 |
| Data Scientist Intern, Tencent Holdings Ltd • <i>Microloan Applicants Classification:</i> Used classification tree model to classify microloan applicants into three risk categories based on previous credit history, enhancing the risk control framework. • <i>Actual Income Estimation:</i> Developed a model for income estimation for microloan applicants by applying separate linear regressions to declared and TU-estimated income, taking the minimum to mitigate overstatement risks. This approach improved accuracy by 15% over the previous model. • <i>Automated Microloan Approval:</i> Applied category-specified logistic regression to automate the microloan approval process, reducing high-risk approvals with accuracy 73% . | Hong Kong, July- August 2023 |
| Quantitative Researcher Intern, AQUUMON • <i>Self-designed P&L calculator:</i> Developed a P&L calculator and evaluator program to calculate the client's slippage and trading P&L when purchasing CTAs. • <i>Automated ETL:</i> Designed an automated ETL script to extract client trading data from bank statements and correct discrepancies in company records. • <i>Future Replacement Optimization:</i> Built a Python script to automate futures portfolio management , ensuring optimal contract replacement that maximizes profit based on price, order, and delivery date. | Hong Kong, June- July 2022 |

PROJECTS

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| Applied Math Research: Moist Convection Simulations • Developed 30+ Python scripts to simulate convection models derived from Navier-Stokes equations in 2D and 3D. Ran the simulations on HPC systems, varying resolutions, initial conditions, and boundary conditions. • Applied PCA and Fourier Transform to detect key periodic features from high-dimensional time-series data generated by the simulation. | |
| Global Climate Data Analysis • Estimated key climate parameters by applying linear regression to historical CMIP6 data, including surface temperature, CO ₂ mass, radiative flux, and total precipitable water. Transformed PDE-based climate models into a time-series regression framework by discretizing temperature evolution, enabling statistical inference of climate feedback mechanisms. | |