Curriculum Vitae

Name: Dongwen Ou
Email: andre.ou@duke.edu Personal Webpage: https://andreforgood.github.io/

Education

Sept.09/2021 - Jun.30/2025: B.S. Student in *Xiamen University*, Mathematical Statistics
Feb.19/2024 - Jun.21/2024: Exchange Student in *National Chiao Tung University*, Applied Mathematics
Aug.11/2025 - Now: M.S. Student in *Duke University*, Statisticai Science
Proficient in, R, Python, Learning Algorithms. Fluent in English (IELTS 7.5).

Core Courses and Grades

Mathematical Analysis I, II, III: A-, A, A+; Advanced Algebra I, II: A-, A-; Stochastic Process: A-;
Machine Learning: A+; Multivariate (Statistical) Analysis: A; Time Series: A+; Econometrics: A-;
Microeconomics: A-; Macroeconomics: A; C Language Programming: A; Real Analysis (Honor): B
Introductory Data Science: A; AI and Machine Learning (Deep Learning): A+;
Statistical Computing: B+, Natural Language Process and Large Language Model: A+

Professional Experience

Aug 2022 – Sept 2022: Beijing Analysys Digital Intelligence Technology Assistant Data Analyst
Job Description: Mainly help with data cleaning/ visualization/ predictive modelling. Conducted data analysis on mobile app user interactions to identify content preferences and optimize product recommendations, leading to enhanced sales and customer engagement.
Advisor: Yue Chen

Jul 2022- Aug 2022: Summer School in Imperial College Topic: Data Science in Health care Innovation.
Job Description: Analyzed medical imaging data, specifically lung X-ray images, using Logistic Regression and SVM models to classify COVID-19 infection.
Advisor: Chengliang Dai, Department of Computing - Faculty of Engineering.

Mar 2023 – May 2023: RA (Online) Topic: Biostatistics and Gene Analysis
Job Description: I integrated classical population-genetics analytics with modern deep learning to study regulatory DNA. After establishing baseline population structure—Hardy-Weinberg equilibrium tests, Bayesian allele-frequency estimates and multivariate regressions to flag loci with selection signals—I trained a convolutional neural network to predict transcription-factor binding directly from sequence. Each sequence was represented both as a one-hot matrix and as a learned low-dimensional embedding; these channels passed through motif-scale convolutions, global max-pooling and dense layers. Hyper-parameters (filter width, depth, dropout, LR schedule) were tuned via Bayesian optimisation inside a stratified five-fold cross-validation loop. The final model reached an AUROC of 0.94 on held-out chromosomes, outperforming PWM and lasso-logistic baselines and demonstrating that the network captures both local motifs and longer-range context essential for accurate TF-binding prediction.
Advisor: Dr Jaromir Sant, Department of Statistics, University of Oxford.

Jun 2024 – Aug 2024: RA in North Carolina State University Topic: AI and Crisis Communication
Job Description: At NC State I built a 300-paper corpus on AI in crisis communication and, rather than fine-tuning large language models on this small domain set, transformed titles and abstracts into Word2Vec/fastText embeddings and applied hierarchical K-Means plus DBSCAN to spot research patterns—showing that BERT-based models paired with Situational Crisis Communication Theory dominate while RL methods are scarce. Leveraging these insights, I compiled time-stamped social-media and press-release data from Fortune 500 firms across fifteen crises, scored daily sentiment with a RoBERTa classifier, and fitted ARIMA/SARIMA/GARCH models; the best SARIMA variant predicted five-day-ahead shifts in corporate tone (positive/neutral/negative) with about 15 % MAE, giving communicators an early-warning signal of likely response trajectories.
Advisor: Alice (Yang) Cheng, Associate Professor, North Carolina State University

Nov 2024 – Jun 2025: Graduation Thesis
Topic: Transfer Learning for Option Pricing Using Large Models.
Job Description:
For my graduation thesis, I implemented a transfer learning model for option pricing. The project involved pretraining the model using **synthetic data** and fine-tuning it with **real option price data** from Option Metrics. Additionally, I experimented with a **ResNet50 architecture** (based on Chen et al. 2023) and explored the use of a **Transformer structure** for further model improvements. To optimize the model, I employed Bayesian optimization to automatically search for effective hyperparameter configurations. The resulting model outperformed the baseline ResNet architecture in both accuracy and robustness.
Advisor: Chendi Wang, Assistant Professor, Xiamen University
Mainly Referenced Paper: Chen, Hui and Cheng, Yuhan and Liu, Yanchu and Tang, Ke, Teaching Economics to the Machines (November 23, 2023). Available at SSRN: https://ssrn.com/abstract=4642167 or http://dx.doi.org/10.2139/ssrn.4642167

Campus Experience and Awards

China Undergraduate Mathematical Contest in Modeling
Third Prize | 2024
l Competed in a national-level contest, applying mathematical theory and computational tools to solve complex, open-ended problems.

Leader, Python and Machine Learning Group
Wiser Club, Xiamen University | Oct. 2023 – Jun. 2025
l Led sessions on Python programming and machine learning fundamentals, mentoring new members.
l Developed and delivered tutorials, showcasing leadership and strong technical expertise in machine learning algorithms.