YIWEI DONG

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No. 59 Zhongguancun Street, Haidian District, Beijing, China

EDUCATION

Renmin University of China, Beijing, China — September 2022 - June 2025
Master of Science in Statistics, School of Statistics
Cumulative GPA: 3.94 / 4.00

Sichuan University, Chengdu, China — September 2018 - June 2022
Bachelor of Science in Statistics, School of Mathematics
Honors Degree, Wu Yuzhang Honors College
Cumulative GPA: 3.92 / 4.00

University of Notre Dame, South Bend, IN, US — January 2020 - May 2020
Semester Study Abroad
Cumulative GPA: 4.00 / 4.00

PUBLICATIONS

Yiwei Dong, Shaoxin Ye, Yuwen Cao, Qiyu Han, Hongteng Xu, Hanfang Yang. A Bayesian Mixture Model of Temporal Point Processes with Determinantal Point Process Prior. (In Revision)

· A short version is accepted by NeurIPS 2024 workshop on Bayesian Decision-making and Uncertainty.

Yiwei Dong, Tingjin Chu, Lele Zhang, Hadi Ghaderi, Hanfang Yang. Pedestrian Volume Prediction Using a Diffusion Convolutional Gated Recurrent Unit Model. (Under Review)

Yusheng Dai, Jin Yang, **Yiwei Dong**, Haipeng Zou, Mingzhi Hu, and Bin Wang. Blind source separation-based IVA-Xception model for bird sound recognition in complex acoustic environments. Electronics Letters 57, no. 11 (2021): 454-456.

Yuchao Cai, Yuheng Ma, **Yiwei Dong**, Hanfang Yang. Extrapolated Random Tree for Regression. Proceedings of the 40th International Conference on Machine Learning (ICML), PMLR 202:3442-3468, 2023.

Donglin Zhan*, Yusheng Dai*, **Yiwei Dong***, Jinghai He, Zhenyi Wang, James Anderson. Meta-adaptive stock movement prediction with two-stage representation learning. Proceedings of the 2024 SIAM International Conference on Data Mining (SDM). Society for Industrial and Applied Mathematics, 2024. (* Equal Contribution)

Qingmei Wang, Fanmeng Wang, **Yiwei Dong**, Yuxin Wu, Bing Su, Hongteng Xu. Learning Structure-enhanced Temporal Point Processes with Scalable Nonparametric Guidance. (Completed and to be submitted)

RESEARCH EXPERIENCE

Generative Dynamic Treatment Regimes
Visiting Student Intern, Carnegie Mellon University — May 2024 - September 2024

Advisors: Prof. Shixiang (Woody) Zhu, Prof. Holly Wiberg

· Conducted a comprehensive literature review on Dynamic Treatment Regimes (DTR), offline reinforcement learning, and causal inference, aiming to leverage offline electronic health records to support clinical decision-making;
· Formulated the problem as an offline sequential decision making setting with unobserved confounders;
· Proposed a generative DTR framework based on variational inference and conditional generative modeling.
· Gave a poster presentation on my formulation at the YinzOR 2024 Student Conference at the Tepper School of Business, Carnegie Mellon University.

Event Sequence Clustering with Bayesian Mixture Model of Point Processes
Graduate Research Assistant, Renmin University of China — August 2023 - March 2024

Advisors: Prof. Hongteng Xu, Prof. Hanfang Yang

- Proposed a new Bayesian mixture model of temporal point processes for event sequence clustering and derived its posterior inference algorithm; Designed a conditional Gibbs sampler; Introduced the determinantal point process prior to yield diverse and interpretable mixture components; Implemented code reproduction of baseline models.
- Integrated various types of both parametric and neural point processes into the proposed mixture model. Verified the effectiveness and scalability of the model on both synthetic and real-world datasets.

Pedestrian volume prediction using a Diffusion Convolutional Gated Recurrent Unit Model
Graduate Research Assistant, Renmin University of China January 2023 - July 2023

Advisors: Dr. Tingjin Chu, Dr. Lele Zhang, Prof. Hadi Ghaderi, Prof. Hanfang Yang

- Collated, visualized and analyzed spatiotemporal pedestrian volume data from the City of Melbourne pedestrian counting system; Identified unique temporal patterns in pedestrian flow that contributes to the prediction task.
- Proposed a diffusion convolutional gated recurrent unit with dynamic time warping model that achieves superior prediction performance compared with other spatiotemporal models across multiple evaluation metrics.

Extrapolated Random Tree for Regression
Graduate Research Assistant, Renmin University of China September 2022 - February 2023

Advisor: Prof. Hanfang Yang

- Assisted in Programming the main algorithm of the extrapolated random tree for regression; implemented code reproduction of two regression tree algorithms and conducted comparative experiments on these tree-based models.
- Assisted in the proof of the upper bound of the convergence rates of extrapolated random tree for regression.

Meta-Adaptive Stock Movement Prediction with Two-Stage Representation Learning
Undergraduate Research Assistant, Columbia University (Remote) November 2021 - September 2022

Advisor: Prof. James Anderson

- Built a framework for stock movement prediction based on self-supervised learning and meta-learning.
- Applied a contrastive learning-based method for change point detection prior to meta learning, which makes the model robust against temporal domain shift; extended the overall framework to the online learning scenario.

Blind source separation-based IVA-Xception model for bird sound recognition
Undergraduate Research Assistant, Sichuan University September 2020 - March 2021

Advisor: Prof. Jin Yang

- Proposed to utilize the independent vector analysis algorithm in the frequency domain to separate source signals from the original multi-channel bird sound signal, improving the classification performance by 10% to 16%.

Improve the Predictability of SmartFund
Undergraduate Summer Research, University of Notre Dame May 2020 - June 2020

Advisor: Prof. Meng Jiang

- Learned classic natural language processing methods; Applied SciBERT for text data feature extraction in order to enhance the predictability of a research outcome prediction model named SmartFund. Wrote a *project summary*.

TEACHING

Graduate Teaching Assistant, Renmin University of China

- Data Science (in English) Fall 2023

HONORS AND AWARDS

National Scholarship (for academic performance ranking top 0.2%) December 2023
Merit Student, Renmin University of China September 2023
Honorable Mention, Mathematical Contest in Modeling April 2020

SKILLS AND HOBBIES

Programming	Python (e.g., PyTorch), R, C, MATLAB, SQL, Shell, LaTeX
Selected Courses	Functional Analysis, Advanced Statistics, Stochastic Process
Language	Mandarin (Native), English (TOEFL 107)
Hobbies	Violin (Since Age 5), Table Tennis (2018 SCU Euler Cup Champion), Film