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, Rank: 1 / 30

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

PUBLICATIONS

Yiwei Dong, Shaoxin Ye, Yuwen Cao, Qiyu Han, Hongteng Xu, Hanfang Yang. TP^{2}DP^2: A Bayesian Mixture Model of Temporal Point Processes with Determinantal Point Process Prior. Completed and to be submitted.

Qingmei Wang, Fanmeng Wang, **Yiwei Dong**, Yuxin Wu, Bing Su, Hongteng Xu. Learning Structure-enhanced Temporal Point Processes with Scalable Nonparametric Guidance. Submitted to a conference main track in February 2024.

Yiwei Dong, Tingjin Chu, Lele Zhang, Hanfang Yang, Hadi Ghaderi. Pedestrian volume prediction using a Diffusion Convolutional Gated Recurrent Unit Model. Submitted to IEEE Transactions on Intelligent Transportation Systems in July 2023.

Yuchao Cai, Yuheng Ma, **Yiwei Dong**, Hanfang Yang. Extrapolated Random Tree for Regression. Proceedings of the 40th International Conference on Machine Learning, 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. SIAM International Conference on Data Mining. Society for Industrial and Applied Mathematics. 2024. Accepted. (* Equal Contribution)

· A short version is accepted by NeurIPS 2022 Workshop on Distribution Shifts: Connecting Methods and Applications.

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.

RESEARCH EXPERIENCE

I am interested in developing and applying statistical theories to establish more effective and practically applicable methods for sequential data modeling, such as time series, point processes, and corresponding learning theory:

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

Advisors: Prof. Hongteng Xu, Prof. Hanfang Yang

· Proposed a novel Bayesian mixture model of temporal point processes for cluster detection and a conditional Gibbs sampler for model's posterior inference. Introduced the determinantal point process prior to automatically yield more diverse and interpretable mixture components.

· Integrated various types of both parametric and neural point processes into the proposed framework. Verified the effectiveness and scalability of the mixture 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　　　　　　　　　　　February 2023 - July 2023

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

· Collated, visualized and analyzed spatiotemporal pedestrian volume data obtained from the City of Melbourne pedestrian counting system, applying five statistical spatiotemporal models and neural networks to fit the data.
· Identified unique temporal patterns in pedestrian flow that contributes to the prediction task based on empirical data. Proposed an extension of diffusion convolutional recurrent neural network with dynamic time warping, achieving superior performance compared to traditional models across multiple accuracy 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 for the convergence rates of 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: Dr. 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

· Applied the SciBERT Model for textual feature extraction, so as to enhance the predictability of a research outcome prediction model named SmartFund; learned principles and classic models of natural language processing.
· Assisted in fine-tuning two BERT models from Hugging Face; wrote a *project summary*.

TEACHING

Graduate Teaching Assistant, Renmin University of China

· Data Science (in English)　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　Fall 2023

HONORS AND AWARDS

National Scholarship of China	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, Shell, LaTeX
Selected Courses	Functional Analysis (95), Advanced Statistics (91), Stochastic Process (96)
Language	Mandarin (Native), English (TOEFL 107)
Hobbies	Violin (Since Age 5), Table Tennis (2018 School Cup Champion), Film