Shikai Fang

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Education

The University of Utah, Salt lake city , UT, USA 2019.09 – 2023.12(estimate)

School of computing Phd student: Computer Science

Temple University ,Philadelphia, PA, USA 2017.09 – 2019.05

College of computer and information science M.S: Computer Science

University of Science and Technology of China (USTC), Hefei, Anhui, China 2014.09 – 2018.05

School of the gifted young B.S: Statistic, Computer Science(as double degree)

Skills

Basic programming languages & machine learning tools: Python, C, Java, matlab, pytorch, tensorflow

Research Interest: Bayesian machine learning, Tensor learning, Physical-inspired machine learning, AI4Science, Quantitative Trading Research

Experience

Summer Associate **Morgan Stanley**, NYC, USA **2022.06– 2022.08**

- Work as research intern at machine learning core research group of MS, focus on the frontier research of diffusion models, Schrodinger Bridge and other physical-inspired ML probabilistic models, as well as their applications in the financial sequence modeling.
- Apply tensor decomposition idea on asset pricing problem, achieve 10+% performance boosting.

Research Consultant **ChengShi Bio-Tech LLC**, a startup of AI-Drug Discover, China **2020.08 – 2021.08**

- Develop novel deep integrated models for immune neoantigen exploration to speed up the mRNA vaccine development targeted for tumor.
- Work out two patents (China) on MCH-class-1 interaction predictions with machine learning methods.

Graduate Research assistant **The University of Utah,** Salt Lake City, UT, USA **2019.09 – Present**

- Apply Bayesian model, such like Bayesian deep network, sparse Gaussian process for tensor factorization task, which could offer not only storage-efficient streaming inference, but also the uncertainty measure.
- Develop efficient probabilistic inference, sampling and optimization algorithms, which allow uncertainty, sparsity and interpretability in the physical-informed machine learning model.

Research Intern **Fudan University**, Shanghai, China **2018.05 – 2018.08**

- Apply generative models and transfer learning to enhance the classifier trained on small brain image dataset(fmri data).

Quantitative Trading Competition **Union Bank of Switzerland (UBS) Security,** Beijing, China **2018.10 –2018.11**

- Work as a team, apply ensemble learning by bagging the effects of several financial factors to predict the changing direction of stock price, won the completion as 4th best profit team over 200+ teams.

Trading strategy development intern **Worldquant Foundation,** Beijing, China **2017.07 – 2017.08**

- Get golden medal in quantitative trading Challenge and get internship offer (Best score: top 4 in China field over 500+ competitors)
- During the intern, use machine learning methods to model the trading signals based on the price/volume and fundamental data of stocks, and develop the optimal execution strategy with back-test framework.

Publication

Shikai Fang, Akil Narayan, Robert Kirby, and Shandian Zhe, "Bayesian Continuous-Time Tucker Decomposition", The 39th International Conference on Machine Learning (**ICML) 2022** ***(Oral paper, top 2% over all submission)***

Shikai Fang, Zheng Wang, Zhimeng Pan, Ji Liu, and Shandian Zhe, "Streaming Bayesian Deep Tensor Factorization", The 38th International Conference on Machine Learning (**ICML**), 2021

Shikai Fang, Robert. M. Kirby, and Shandian Zhe, "Bayesian Streaming Sparse Tucker Decomposition", The 37th Conference on Uncertainty in Artificial Intelligence (**UAI**), 2021

Shikai Fang, Shandian Zhe, Kuang-chih Lee, Kai Zhang, and Jennifer Neville, "Online Bayesian Sparse Learning with Spike and Slab Priors", IEEE International Conference on Data Mining (**ICDM**), 2020.

Conor Tillinghast, **Shikai Fang**, Kai Zheng, and Shandian Zhe, "Probabilistic Neural-Kernel Tensor Decomposition", IEEE International Conference

on Data Mining (**ICDM**), 2020.

Tao Yang, **Shikai Fang,** Shibo Li, Yulan Wang, and Qingyao Ai. Analysis of Multivariate Scoring Functions for Automatic Unbiased Learning to Rank. Accepted in *Proceedings of the 29th ACM International Conference on Information and Knowledge Management* (**CIKM**), 2020

Patents

(China Patent) Shikai Fang, Caiyi Fei, Shi Xu, "A novel method for HLA interaction predictions by multi-modality deep encoding" **(License No: ZL202111205908.2)**

(China Patent) Shikai Fang, Caiyi Fei, Shi Xu, "A reinforcement method for HLA interaction predictions system by deep transfer learning" **(License No: ZL202111204491.8)**

Academia Service

Invited Reviewer: NeurIPS, ICML, UAI, AISTATS, ICDM, Frontiers in Big Data, IEEE Signal Process

Invited Talk at Zhejiang University, 2022.07

Invited Talk at Informs, 2020, 2021