

Education

The University of Utah, Salt Lake City, UT, USA

2019.09 – 2024.05

School of computing

PhD: 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)

Research Interests

Methodology:

Bayesian machine learning, Tensor learning, Sequential inference, Sparse learning, Gaussian Processes

Application:

AI for Time Series, AI for Science (drug discover, physics, climate), AI-driven Quantitative Research

Publication

(*: Equal contribution)

Conference and Journal Papers

1. **Shikai Fang**, Xin Yu, Shibo Li, Zheng Wang, Robert Kirby, Shandian Zhe, “**Streaming Factor Trajectory Learning for Temporal Tensor Decomposition**”, The 37th Conference on Neural Information Processing Systems (NeurIPS 2023)
2. Zheng Wang*, **Shikai Fang***, Shibo Li, Shandian Zhe, “**Dynamic Tensor Decomposition via Neural Diffusion-Reaction Processes**”, The 37th Conference on Neural Information Processing Systems (NeurIPS 2023) (*[Spotlight, top 4% over all submissions](#)*)
3. **Shikai Fang**, Shandian Zhe, Hui-Ming Lin, Arun A. Azad, Heidi Fettke, Edmond M Kwan, Lisa Horvath, Blossom Mak, Tiantian Zheng, Pan Du, Shidong Jia, Robert M. Kirby, Manish Kohli MD, “**Multi-Omic Integration of Blood-Based Tumor Associated Genomic And Lipidomic Profiles Using Machine Learning Models in Metastatic Prostate Cancer**”, JCO Clinical Cancer Informatics (JCO-CCI), 2023 (*[most popular paper on JCO-CCI, 1000+ downloads](#)*)
4. Yu Chen*, Wei Deng*, **Shikai Fang***, Fengpei Li*, Tianjiao Nicole Yang, Yikai Zhang, Kashif Rasul, Shandian Zhe, Anderson Schneider, and Yuriy Nevmyvaka, “**Provably Convergent Schrodinger Bridge with Applications to Probabilistic Time Series Imputation**”, The 40th International Conference on Machine Learning (ICML 2023)
5. **Shikai Fang**, Akil Narayan, Robert Kirby, and Shandian Zhe, “**Bayesian Continuous-Time Tucker Decomposition**”, The 39th International Conference on Machine Learning (ICML 2022) (*[accept as Long Oral, top 2% over all submissions](#)*)

6. **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**)
7. **Shikai Fang**, Robert. M. Kirby, and Shandian Zhe, “**Bayesian Streaming Sparse Tucker Decomposition**”, The 37th Conference on Uncertainty in Artificial Intelligence (**UAI 2021**)
8. **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**).
9. Conor Tillinghast, **Shikai Fang**, Kai Zheng, and Shandian Zhe, “**Probabilistic Neural-Kernel Tensor Decomposition**”, IEEE International Conference on Data Mining (**ICDM 2020**)
10. 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

1. **Shikai Fang**, Caiyi Fei, Shi Xu, “A novel method for HLA interaction predictions by multi-modality deep encoding” (**Public Number: ZL202111205908.2**)
2. **Shikai Fang**, Caiyi Fei, Shi Xu, “An augmentation method for HLA interaction predictions system by deep transfer learning” (**Public Number: ZL202111204491.8**)

Preprints and Under Submissions

1. **Shikai Fang**, Qingsong Wen, Yingtao Luo, Shandian Zhe, Liang Sun, "**BayOTIDE: Bayesian Online Multivariate Time series Imputation with functional decomposition**" (submit to **ICLR 2024**) [arxiv #: 2308.14906]
2. **Shikai Fang**, Xin Yu, Zheng Wang, Shibo Li, Robert Kirby, Shandian Zhe, "**Functional Bayesian Tucker Decomposition for Continuous-indexed Tensor Data**"(submit to **ICLR 2024**)
3. **Shikai Fang**, Madison Cooley, Dalong, Shibo Li, Robert Kirby, Shandian Zhe, "**Solving High Frequency and Multi-Scale PDEs with Gaussian Processes**"(submit to **ICLR 2024**)
4. Yingtao Luo, **Shikai Fang**, Bingqing Wu, Qingsong Wen, Liang Sun, "**Physics-Guided Learning of Meteorological Dynamics for Weather Forecasting and Downscaling**"(submit to **ICLR 2024**)

Professional Experience

Alibaba Group (US), Bellevue, USA

2023.05– 2023.08

Research Intern @ AI for Time Series and Decision Group, DAMO Academy

- Work on functional multi-variate time-series analysis and applications in electric and climate modeling.

Milestone: two paper (one first-author & one second-author) submit to ICLR 2024

Morgan Stanley, NYC, USA

2022.06– 2022.08

Research Intern @ Machine Learning Core Research Group

- Work on financial time-series modeling with physical-inspired AI models, like diffusion models and Schrodinger Bridge.

Milestone: one co-first-author paper accepted at ICML 2023; 10+% performance boosting at firm asset pricing data

ChengShi Bio-Tech, a startup of AI-driven Drug Discover, China

2020.08 – 2021.08

Head AI research Consultant

- Work on developing ML models for immune neoantigen exploration to speed up the mRNA vaccine development.

Milestone: two first-author core patents; help firm to raise over \$10M+ in pre-A and A financing

The University of Utah, Salt Lake City, UT, USA

2019.09 – 2024.05

Graduate Research Assistant advised by [Prof. Mike Kirby](#) and [Prof. Shandian Zhe](#)

- Work on Bayesian model, Tensor decomposition, Gaussian Processes and AI for physics.

Worldquant Foundation, Beijing, China

2017.06 – 2017.08

Quantitative Research Intern & Completion

- Work on using ML methods to capture trading signals based on the price/volume and fundamental data of stocks.

Milestone: golden-level price of the quantitative trading challenge, rank 4/600+

Service & Award

- **Program Committee/Reviewer: ICML, ICLR, NeurIPS, UAI, AISTATS, ICDM, IEEE Signal Process, ICASSP, Frontiers in Big Data**
- **Invited Talk at Zhejiang University, 2022.07**
- **Invited Talk at Informs Annual Meeting, 2020, 2021**
- **ICDM travel grant 2020**
- **First price of the Quantitative Trading Competition raised by Union Bank of Switzerland (UBS) Security, rank 4/300+**