Works in summary

My works are categorized into

1. **Flow-based Generative Models**: efficient alternative to diffusion models.

2. **Conformal prediction for uncertainty quantification**: build prediction regions for pre-trained models.

3. **General statistics/ML/optimization**: miscellaneous works covering theory and applications.

1 Flow-based Generative Models

Conference/Journal

1. Chen Xu, Xiuyuan Cheng, and Yao Xie. Normalizing flow neural networks by jko scheme. *Advances in Neural Information Processing Systems*, 36, 2024b

2. Chen Xu, Jonghyeok Lee, Xiuyuan Cheng, and Yao Xie. Flow-based distributionally robust optimization. *IEEE Journal on Selected Areas in Information Theory*, 2024d

3. Chen Xu, Xiuyuan Cheng, and Yao Xie. Invertible neural networks for graph prediction. *IEEE Journal on Selected Areas in Information Theory*, 3(3):454–467, 2022

Workshop

1. Chen Xu, Xiuyuan Cheng, and Yao Xie. Computing high-dimensional optimal transport by flow neural networks. In *NeurIPS 2023 Workshop Optimal Transport and Machine Learning*, 2023a

Preprint

1. Chen Xu, Xiuyuan Cheng, and Yao Xie. Local flow matching generative models. *arXiv preprint arXiv:2410.02548*, 2024a

2 Conformal prediction for uncertainty quantification

Conference/Journal

1. Chen Xu, Hanyang Jiang, and Yao Xie. Conformal prediction for multi-dimensional time series by ellipsoidal sets. In *Proceedings of the 41st International Conference on Machine Learning*, pages 55076–55099. PMLR, 2024c

2. Chen Xu and Yao Xie. Sequential predictive conformal inference for time series. In *International Conference on Machine Learning*, pages 38707–38727. PMLR, 2023b

3. Chen Xu and Yao Xie. Conformal prediction for time series. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 45(10):11575–11587, 2023a

4. Chen Xu and Yao Xie. Conformal prediction interval for dynamic time-series. In *International Conference on Machine Learning*, pages 11559–11569. PMLR, 2021b

5. Byol Kim, Chen Xu, and Rina Barber. Predictive inference is free with the jackknife+-after-bootstrap. *Advances in Neural Information Processing Systems*, 33:4138–4149, 2020

Workshop

1. Junghwan Lee, Chen Xu, and Yao Xie. Conformal prediction for time series with transformer. In *ICML 2024 Workshop on Structured Probabilistic Inference & Generative Modeling*, 2024b

2. Chen Xu and Yao Xie. Conformal prediction set for time-series. In *ICML 2022 Workshop on Distribution-free Uncertainty Quantification*, 2022

3. Chen Xu and Yao Xie. Conformal anomaly detection on spatio-temporal observations with missing data. In *ICML 2021 Workshop on Distribution-free Uncertainty Quantification*, 2021a

Preprint

1. Jonghyeok Lee, Chen Xu, and Yao Xie. Kernel-based optimally weighted conformal prediction intervals. *arXiv preprint arXiv:2405.16828*, 2024a

3 General statistics/ML/optimization

Conference/Journal

1. Minghe Zhang, Chen Xu, Andy Sun, Feng Qiu, and Yao Xie. Solar radiation ramping events modeling using spatio-temporal point processes. *(Minor revision) INFORMS Journal on Data Science*, 2024

2. Chen Xu, Yao Xie, Daniel A Zuniga Vazquez, Rui Yao, and Feng Qiu. Spatio-temporal wildfire prediction using multi-modal data. *IEEE Journal on Selected Areas in Information Theory*, 4:302–313, 2023b

Workshop

1. Chen Xu, Xiuyuan Cheng, and Yao Xie. An alternative approach to train neural networks using monotone variational inequality. In *OPT 2023: Optimization for Machine Learning*

Preprint

1. Anatoli Juditsky, Arkadi Nemirovski, Yao Xie, and Chen Xu. Generalized generalized linear models: Convex estimation and online bounds. *arXiv preprint arXiv:2304.13793*, 2023

References

Anatoli Juditsky, Arkadi Nemirovski, Yao Xie, and Chen Xu. Generalized generalized linear models: Convex estimation and online bounds. *arXiv preprint arXiv:2304.13793*, 2023.

Byol Kim, Chen Xu, and Rina Barber. Predictive inference is free with the jackknife+-after-bootstrap. *Advances in Neural Information Processing Systems*, 33:4138–4149, 2020.

Jonghyeok Lee, Chen Xu, and Yao Xie. Kernel-based optimally weighted conformal prediction intervals. *arXiv preprint arXiv:2405.16828*, 2024a.

Junghwan Lee, Chen Xu, and Yao Xie. Conformal prediction for time series with transformer. In *ICML 2024 Workshop on Structured Probabilistic Inference & Generative Modeling*, 2024b.

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Chen Xu, Jonghyeok Lee, Xiuyuan Cheng, and Yao Xie. Flow-based distributionally robust optimization. *IEEE Journal on Selected Areas in Information Theory*, 2024d.

Minghe Zhang, Chen Xu, Andy Sun, Feng Qiu, and Yao Xie. Solar radiation ramping events modeling using spatio-temporal point processes. *(Minor revision) INFORMS Journal on Data Science*, 2024.