CHUNHENG JIANG

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EDUCATION

M.S & Ph.D. in Computer Science, Rensselaer Polytechnic Institute (RPI), Troy NY — May 2016 – May 2022

M.S. in Applied Mathematics, Southwest Jiaotong University, Chengdu, China — Sep 2011 – Jul 2014

WORK EXPERIENCE

Machine Learning Engineer, Google, Mountain View, CA — Aug 2022 – *present*

– Developed deep learning solutions for user engagement, implementing personalization to drive business value

– Built scalable machine learning systems for real-time predictions in complex decision-making scenarios

Research Summer Intern, IBM Thomas J. Watson Research Center, Yorktown Heights, NY — Jun 2020 – Aug 2020

– Extended neural style transfer techniques to synthesize audios with desired environmental context

– Generated augmented data with diverse environmental sound textures to increase the robustness of audio classifiers

SELECTED PROJECTS

Dynamical System View of Neural Network Training // Research Extern, RPI-IBM AIRC — Aug 2020 – May 2022

– Built a novel graph representation for various neural architectures (e.g., ResNet, DenseNet, MobileNet, VGG, etc.)

– Derived approximated training dynamics to speed-up neural network training and neural architecture search

Mean-Field Approaches for Network Inference // Research Assistant, RPI — Aug 2018 – May 2020

– Developed a set of mean-field approaches to infer various incomplete networks (e.g., social, ecology, epidemic, etc.)

– Designed a heuristic optimization algorithm based on our topology inference approach to solve K-SUM problem

SELECTED PUBLICATIONS

(See full list on Google Scholar)

Jiang, C., Huang, Z., Pedapati, T., Chen, P.-Y., Sun, Y. & Gao, J. Network properties determine neural network performance. *Nat. Commun.*, 15 (1), 5718 (2024)

Jiang, C., Pedapati, T., Chen, P.-Y., Sun, Y. & Gao, J. Neural Capacitance: A new perspective of neural network selection via edge dynamics. Preprint at https://arxiv.org/abs/2201.04194 (2022)

Niu, X., **Jiang, C.**, Gao, J., Korniss, G. & Szymanski, B. K. From data to complex network control of airline flight delays. *Sci. Rep.* 11, 18715 (2021)

Niu, X., Brissette, C., **Jiang, C.**, Gao, J., Korniss, G. & Szymanski, B. K. Heuristic assessment of choices for risk network control. *Sci. Rep.*, 11, 7645 (2021)

Jiang, C., Gao, J. & Magdon-Ismail, M. True nonlinear dynamics from incomplete networks. In *Proceedings of the AAAI Conference on Artificial Intelligence*, vol. 34, 131 – 138 (**AAAI**, 2020)

Jiang, C., Gao, J. & Magdon-Ismail, M. Inferring degrees from incomplete networks and nonlinear dynamics. In *Proceedings of the 29th International Joint Conference on Artificial Intelligence*, 3307 – 3313 (**IJCAI**, 2020)

Wang, J., Sikdar, S., Shepherd, T., Zhao, Z., **Jiang, C.** & Xia L. Practical algorithms for multi-stage voting rules with parallel universes tiebreaking. In *Proceedings of the AAAI Conference on Artificial Intelligence*, vol. 33, 2189 – 2196 (**AAAI**, 2019)

Jiang, C., Sikdar, S., Wang, J., Xia, L. & Zhao, Z. Practical algorithms for computing STV and other multi-round voting rules. In *EXPLORE-2017: The 4th Workshop on Exploring Beyond the Worst Case in Computational Social Choice*, (2017)

Jiang, C. & Lin, W. DEARank: A Data-envelopment-analysis-based Ranking Method. *Mach. Learn.*, 101, 415 – 435 (2015)

SERVICE TO PROFESSION

Reviewer for **NeurIPS**, **ICML**, **WWW**, Complex Networks (*since 2018*), NetSci, NERCCS

SKILLS

Python, Java, C/C++, Matlab, MPI, HTML, LaTeX, Markdown // TensorFlow, PyTorch, Keras, Pandas, Scikit-learn, XGBoost, LightGBM, SLURM, Git // MySQL, SQLite, MongoDB // Matplotlib, TikZ, NetworkX, D3.js