Xiaohan Chen

Contact

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Employment History

Research Intern Jun, 2021 — Aug, 2021
Microsoft Cloud & AI, Bellevue, WA, USA Oct, 2020 — Dec, 2020
Supervisor: Dr. Yu Cheng and Dr. Zhe Gan Jun, 2020 — Aug, 2020

Research Intern Jun, 2019 — Nov, 2019
Max Planck Institute for Intelligent Systems, Tübingen, Germany
Supervisor: Dr. Krikamol Muandet and Dr. Siyu Tang

Education Background

University of Texas at Austin **Austin, TX, U.S.**
Ph.D. (5th year) in Electrical and Computer Engineering Aug, 2020 — Present
Visual Informatics Group
Supervisor: Prof. Zhangyang (Atlas) Wang
Expected graduation in Summer 2022

Texas A&M University **College Station, TX, U.S.**
Ph.D. in Computer Science (transferred with my advisor) Aug, 2017 — Aug, 2020
Supervisor: Prof. Zhangyang (Atlas) Wang

University of Science and Technology of China **Hefei, Anhui, China**
B.S. in Mathematics and Applied Mathematics Sep, 2013 — Jun, 2017
B.E. in Computer Science (Double Degree)

Research Interests

- *Sparse Optimization and Inverse Problems*
- *Learning to Optimize, and Meta Learning*
- *Efficient Deep Learning, and Sparse Neural Networks (Lottery Ticket Hypothesis)*

Publications

* The authors equally contributed to the paper.

Refereed Papers

1. Xiaohan Chen, Yu Cheng, Shuohang Wang, Zhe Gan, Jingjing Liu, Zhangyang Wang, "The Elastic Lottery Ticket Hypothesis", *In Proceedings of Advances in Neural Information Processing Systems* (**NeurIPS**), 2021.

2. Xiaohan Chen*, Jialin Liu*, Zhangyang Wang, Wotao Yin, "Hyperparameter Tuning is All You Need for LISTA", *In Proceedings of Advances in Neural Information Processing Systems* (**NeurIPS**), 2021.

3. Xiaolong Ma, Geng Yuan, Xuan Shen, Tianlong Chen, Xuxi Chen, Xiaohan Chen, Ning Liu, Minghai Qin, Sijia Liu, Zhangyang Wang, Yanzhi Wang, "Sanity Checks for Lottery Tickets: Does Your Winning Ticket Really Win the Jackpot?", *In Proceedings of Advances in Neural Information Processing Systems* (**NeurIPS**), 2021.

4. Shiwei Liu, Tianlong Chen, Xiaohan Chen, Zahra Atashgahi, Lu Yin, Huanyu Kou, Li Shen, Mykola Pechenizkiy, Zhangyang Wang, Decebal Constantin Mocanu, "Sparse Training via Boosting Pruning Plasticity with Neuroregeneration", *In Proceedings of Advances in Neural Information Processing Systems* (**NeurIPS**), 2021.

5. Xiaohan Chen, Yu Cheng, Shuohang Wang, Zhe Gan, Zhangyang Wang, Jingjing Liu, "EarlyBERT: Efficient BERT Training via Early-bird Lottery Tickets", *The Joint Conference of the 59th Annual Meeting of the Association for Computational Linguistics and the 11th International Joint Conference on Natural Language Processing* (**ACL-IJCNLP**), 2021. Doi: https://doi.org/10.18653/v1/2021.acl-long.171.

6. Tianjian Meng*, Xiaohan Chen*, Yifan Jiang, Zhangyang Wang, "A Design Space Study for LISTA and Beyond", *International Conference on Learning Representations* (**ICLR**), 2021.

7. Jiayi Shen*, Xiaohan Chen*, Howard Heaton*, Tianlong Chen, Jialin Liu, Wotao Yin, Zhangyang Wang, "Learning A Minimax Optimizer: A Pilot Study", *International Conference on Learning Representations* (**ICLR**), 2021.

8. Xiaohan Chen, Zhangyang Wang, Siyu Tang, Krikamol Muandet, "MATE: Plugging in Model Awareness to Task Embedding for Meta Learning", *In Proceedings of Advances in Neural Information Processing Systems* (**NeurIPS**), 2020.

9. Haoran You, Xiaohan Chen, Yongan Zhang, Chaojian Li, Sicheng Li, Zihao Liu, Zhangyang Wang, Yingyan Lin, "ShiftAddNet: A Hardware-Inspired Deep Network", *In Proceedings of Advances in Neural Information Processing Systems* (**NeurIPS**), 2020.

10. Zepeng Huo, Arash Pakbin, Xiaohan Chen, Nathan Hurley, Ye Yuan, Xiaoning Qian, Zhangyang Wang, Shuai Huang, Bobak Mortazavi, "Uncertainty Quantification for Deep Context-Aware Mobile Activity Recognition and Unknown Context Discovery", *International Conference on Artificial Intelligence and Statistics* (**AISTATS**), 2020.

11. Xiaohan Chen*, Yang Zhao*, Yue Wang, Chaojian Li, Haoran You, Yonggan Fu, Yuan Xie, Zhangyang Wang, Yingyan Lin, "SmartExchange: Trading Higher-cost Memory Storage/Access for Lower-cost Computation", *IEEE/ACM International Symposium on Computer Architecture* (**ISCA**), 2020.

12. Haoran You, Chaojian Li, Pengfei Xu, Yonggan Fu, Yue Wang, Xiaohan Chen, Richard G Baraniuk, Yingyan Lin, Zhangyang Wang, "Drawing Early-Bird Tickets: Toward More Efficient Training of Deep Networks", *International Conference on Learning Representations* (**ICLR**), 2020.

13. Xiaohan Chen*, Ziyu Jiang*, Yue Wang*, Pengfei Xu, Yang Zhao, Yingyan Lin, Zhangyang Wang, "E2-Train: Energy-Efficient Deep Network Training with Data-, Model-, and Algorithm-Level Saving", *In Proceedings of Advances in Neural Information Processing Systems* (**NeurIPS**), 2019.

14. Ernest Ryu, Jialin Liu, Sicheng Wang, Xiaohan Chen, Zhangyang Wang, Wotao Yin, "Plug-and-Play Methods Provably Converge with Properly Trained Denoisers", *International Conference on Machine Learning* (**ICML**), 2019.

15. Xiaohan Chen*, Jialin Liu*, Zhangyang Wang, Wotao Yin, "ALISTA: Analytic Weights Are As Good As Learned Weights in LISTA", *International Conference on Learning Representations* (**ICLR**), 2019.

16. Xiaohan Chen*, Jialin Liu*, Zhangyang Wang, Wotao Yin, "Theoretical Linear Convergence of Unfolded ISTA and Its Practical Weights and Thresholds", *In Proceedings of Advances in Neural Information Processing Systems* (**NeurIPS**), 2018.

17. Nitin Bansal, Xiaohan Chen, Zhangyang Wang, "Can We Gain More from Orthogonality Regularizations in Training Deep Networks?", In Proceedings of Advances in Neural Information Processing Systems (**NeurIPS**), 2018.

Non-Refereed Papers

1. Shiwei Liu, Tianlong Chen, Zahra Atashgahi, Xiaohan Chen, Ghada Sokar, Elena Mocanu, Mykola Pechenizkiy, Zhangyang Wang, Decebal Constantin Mocanu, "FreeTickets: Accurate, Robust and Efficient Deep Ensemble by Training with Dynamic Sparsity", *arXiv preprint arXiv:2106.14568*.

2. Tianlong Chen, Xiaohan Chen, Wuyang Chen, Howard Heaton, Jialin Liu, Zhangyang Wang, Wotao Yin, "Learning to optimize: A primer and a benchmark", *arXiv preprint arXiv:2103.12828*.

3. Xiaohan Chen*, Yang Zhao*, Yue Wang, Pengfei Xu, Haoran You, Chaojian Li, Yonggan Fu, Yingyan Lin, Zhangyang Wang, "SmartDeal: Re-Modeling Deep Network Weights for Efficient Inference and Training", *arXiv preprint arXiv:2101.01163*.

4. Howard Heaton, Xiaohan Chen, Zhangyang Wang, Wotao Yin, "Safeguarded Learned Convex Optimization", *arXiv preprint arXiv:2003.01880*.

Honors and Awards

Scholarships

- ICLR Travel Award — Mar, 2019
- NeurIPS Travel Award — Oct, 2018
- AAAI Student Scholarship — Dec, 2017
- Outstanding New Student Award, **Top Class Award** — Sep, 2013

Others

- Qualcomm Innovation Fellowship 2021 Finalist — Jun, 2021
- COMAP's Mathematical Contest in Modeling (MCM), **Honorable Mention** — Apr, 2016
- RoboGame of USTC, **the 2^{nd} place** — Nov, 2015
- Outstanding Young Volunteer, USTC — Jul, 2014

Service and Teaching

- *Reviewer*: NeurIPS (2019/2020), ICML (2020/2021), ICLR (2020/2021), CVPR (2020/2021), ECCV (2020), ICCV (2019), AAAI (2020/2021/2022), ACCV (2020), WACV (2019/2020/2021)
- *Teaching Assistant*:
  - CSCE 633, Machine Learning, Texas A&M University (2018/2019)
  - MIS 285N, Cognitive Computing, University of Texas at Austin (2021)
  - MIS 286N, Emerging Technologies and Business Innovation, University of Texas at Austin (2021)
  - ECE 381V, Advanced Topics in Computer Vision, University of Texas at Austin (2021)
- *Student Volunteer*: AAAI 2018

Technical Skills

Deep Learning Frameworks	PyTorch, TensorFlow, MXNet
Computer Languages	C, C++, Python, MATLAB
Tools	Git, Vim, Visual Studio, Mathematica
LaTeX	