Xiaohan Chen

Contact

Email: xiaohan.chen@utexas.edu   Web: xiaohanchen.com   GitHub: https://github.com/xhchrn

Education Background

University of Texas at Austin   **Austin, TX, U.S.**
Ph.D. (4th year) in Electrical and Computer Engineering   Aug, 2020 — Present
Visual Informatics Group
Supervisor: Prof. Zhangyang (Atlas) Wang

Texas A&M University   **College Station, TX, U.S.**
Ph.D. in Computer Science   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)

Professional Experience

Research Intern   May, 2021 — Aug, 2021
Microsoft Cloud & AI, Bellevue, WA, U.S.   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

Research Interests

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

Conference and Journal Publications

* The authors equally contributed to the paper.

1. Four manuscripts undergoing double-blind review process for NeurIPS 2021.

2. **X. Chen**, Y. Cheng, S. Wang, Z. Gan, Z. Wang, J. 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.

3. T. Meng*, **X. Chen***, Y. Jiang, Z. Wang, "A Design Space Study for LISTA and Beyond", *International Conference on Learning Representations* (**ICLR**), 2021.

4. J. Shen*, **X. Chen***, H. Heaton*, T. Chen, J. Liu, W. Yin, Z. Wang, "Learning A Minimax Optimizer: A Pilot Study", *International Conference on Learning Representations* (**ICLR**), 2021.

5. **X. Chen**, Z. Wang, S. Tang, K. Muandet, "MATE: Plugging in Model Awareness to Task Embedding for Meta Learning", *In Proceedings of Advances in Neural Information Processing Systems* (**NeurIPS**), 2020.

6. H. You, **X. Chen**, Y. Zhang, C. Li, S. Li, Z. Liu, Z. Wang, Y. Lin, "ShiftAddNet: A Hardware-Inspired Deep Network", *In Proceedings of Advances in Neural Information Processing Systems* (**NeurIPS**), 2020.

7. Z. Huo, A. Pakbin, **X. Chen**, N. Hurley, Y. Yuan, X. Qian, Z. Wang, S. Huang, B. Mortazavi, "Uncertainty Quantification for Deep Context-Aware Mobile Activity Recognition and Unknown Context Discovery", *International Conference on Artificial Intelligence and Statistics* (**AISTATS**), 2020.

8. **X. Chen***, Y. Zhao*, Y. Wang, C. Li, Y. Xie, Z. Wang, Y. Lin, "SmartExchange: Trading Higher-cost Memory Storage/Access for Lower-cost Computation", *IEEE/ACM International Symposium on Computer Architecture* (**ISCA**), 2020.

9. H. You, C. Li, P. Xu, Y. Fu, **X. Chen**, Y. Lin, Z. Wang, R. Baraniuk , "Drawing Early-Bird Tickets: Toward More Efficient Training of Deep Networks", *International Conference on Learning Representations* (**ICLR**), 2020.

10. **X. Chen***, Z. Jiang*, Y. Wang*, P. Xu, Y. Zhao, Y. Lin, Z. 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.

11. E. Ryu, J. Liu, S. Wang, **X. Chen**, Z. Wang, W. Yin, "Plug-and-Play Methods Provably Converge with Properly Trained Denoisers", *International Conference on Machine Learning* (**ICML**), 2019.

12. **X. Chen***, J. Liu*, Z. Wang, W. Yin, "ALISTA: Analytic Weights Are As Good As Learned Weights in LISTA", *International Conference on Learning Representations* (**ICLR**), 2019.

13. **X. Chen***, J. Liu*, Z. Wang, W. Yin, "Theoretical Linear Convergence of Unfolded ISTA and Its Practical Weights and Thresholds", *In Proceedings of Advances in Neural Information Processing Systems* (**NeurIPS**), 2018.

14. N. Bansal, **X. Chen**, Z. Wang, "Can We Gain More from Orthogonality Regularizations in Training Deep Networks?", In Proceedings of Advances in Neural Information Processing Systems (**NeurIPS**), 2018.

Pre-prints, Non-archival Venues and Being Peer-Reviewed

* The authors equally contributed to the paper.

1. **X. Chen**, Y. Cheng, S. Wang, Z. Gan, J. Liu, Z. Wang, "The Elastic Lottery Ticket Hypothesis", *arXiv pre-print*.

2. T. Chen, **X. Chen**, W. Chen, H. Heaton, J. Liu, Z. Wang, W. Yin, "Learning to Optimize: A Primer and A Benchmark", *arXiv pre-print* under review in *Journal of Machine Learning Research* (**JMLR**).

3. H. Heaton, **X. Chen**, Z. Wang, W. Yin, "Safeguarded Learned Convex Optimization", *arXiv pre-print* under review in *Journal of Machine Learning Research* (**JMLR**).

4. **X. Chen***, Y. Zhao*, Y. Wang, P. Xu, H. You, C. Li, Y. Fu, Y. Lin, Z. Wang, "SmartDeal: Re-Modeling Deep Network Weights for Efficient Inference and Training", *arXiv pre-print* undergoing the review process of The IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**).

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 2nd place**   Nov, 2015
– Outstanding Young Volunteer, USTC   Jul, 2014

Service and Teaching

– *Reviewer*: NeurIPS (2019/2020), ICML (2020, 2021), ICLR (2020), 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)
– *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	