Tianjian Meng

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Education

University of Pittsburgh August 2016 - August 2019
Bachelor of Science in Computer Science, **summa cum laude**, departmental honors

Carnegie Mellon University May 2017 - May 2018
Visiting/Non-Degree Student

Beijing Jiaotong University September 2014 - June 2016
Bachelor of Engineering in Computer Science and Technology, Discontinued (Transferred out)

Publications

Yanqi Zhou*, Xuanyi Dong*, Berkin Akin*, Mingxing Tan, Daiyi Peng, **Tianjian Meng**, Amir Yazdanbakhsh, Da Huang, Ravi Narayanaswami, James Laudon. Rethinking Co-design of Neural Architectures and Hardware Accelerators, in *Submission to ICML 2021*.

Rui Qian*, **Tianjian Meng***, Boqing Gong, Ming-Hsuan Yang, Huisheng Wang, Serge Belongie, Yin Cui. Spatiotemporal Contrastive Video Representation Learning. In *NeurIPS 2020 SSL Workshop*, in *Submission to CVPR 2021*.

Tianjian Meng*, Xiaohan Chen*, Yifan Jiang, Zhangyang Wang. A Design Space Study for LISTA and Beyond. In *The 9th International Conference on Learning Representations (ICLR)*, May 2021.

Denny Zhou, Mao Ye, Chen Chen*, **Tianjian Meng***, Mingxing Tan*, Xiaodan Song, Quoc Le, Qiang Liu, Dale Schuurmans. Go Wide, Then Narrow: Efficient Training of Deep Thin Networks. In *The 37th International Conference on Machine Learning (ICML)*, July 2020.

Wenqi Shao*, **Tianjian Meng***, Jingyu Li, Ruimao Zhang, Yudian Li, Xiaogang Wang, Ping Luo. SSN: Learning Sparse Switchable Normalization via SparsestMax. In *The IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, June 2019.

Experiences

Software Engineer at Google Research September 2019 - Present
Brain Team
Host: Dr. Mingxing Tan and Dr. Quoc Le
- Working on improving model efficiency with AutoML.
- Working on self-supervised representation learning for video understanding and object detection.

Research Intern at ByteDance AI Lab July 2019 - September 2019
Visual Computing Group
Mentor: Dr. Changhu Wang
- Worked on Computer Vision technologies for video content understanding and moderation.
- Provided services for ByteDance core products including TikTok, BuzzVideo and Vigo Video.

Research Assistant at Carnegie Mellon University January 2019 - July 2019
The Robotics Institute
Cooperator: Prof. Xiaolong Wang
- Worked on efficient video compression and representation learning.

Research Assistant at Chinese University of Hong Kong August 2018 - December 2018
CUHK-SenseTime Joint Laboratory
Mentor: Prof. Ping Luo
- Proposed a novel algorithm called **SparsestMax** which turns sparse constrained optimization problem into feed-forward computation.
- Applied *SparsestMax* to normalization method in deep neural network, and proposed **Sparse Switchable Normalization**, which achieved both higher performance and faster inference speed on various challenging computer vision tasks.
- Applied *SparsestMax* to other domains such as efficient single-shot neural architecture search.

Research Intern at SenseTime Research May 2018 - December 2018
Human-Cyber-Physical Intelligence Integration
Mentor: Dr. Litong Feng and Prof. Liang Lin
- Developed and maintained an user-friendly, modular, and extensible internal deep learning tool chain for automatic and distributed model training.
- Built a robust and usable model conversion and low-precision network quantization pipeline, accelerating models by $3\times$ without harming the performance and integrating model training and product deployment seamlessly.
- Re-implemented *Efficient Neural Architecture Search* and conducted research on efficient neural architecture and augmentation search for an AutoML platform.
- Participated in several computer vision competitions such as *Open Images* and *AI Challenger*.

Research Assistant at University of Pittsburgh April 2017 - April 2018
Pitt Computational Social Dynamics Lab
Supervisor: Prof. Yu-Ru Lin
- Participated in the project *Data Wrangling for Nuclear Nonproliferation Monitoring*, which aimed to recognize and prevent anomalous nuclear activities.
- Scraped and prepared data using publicly available information, and used text mining techniques for anomaly detection.
- Built a visualization system to map the machine classified cuing information over geo-space and time and help nonproliferation decision making.

Competitions

Top 14% in *The 3rd YouTube-8M Video Understanding Challenge* (ICCV'19 Workshop) 2019
4th in *AI Challenger Short Video Real-time Classification* 2018
Top 12% in *Google AI Open Images - Visual Relationship Track* (ECCV'18 Workshop) 2018
Top 2% in *2018 Data Science Bowl* 2018
Silver Award (top 5%) in *Capital University Entrepreneurship Competition* 2016
First Prize in *ACM-ICPC University Programming Competition in Beijing Jiaotong University* 2015

Technical Strengths

Programming Language
Python, C/C++, Java, JavaScript, LaTeX

Proficient Toolkit
PyTorch, TensorFlow, MXNet, ONNX, TensorRT, Docker, Django, React, D3.js, Bootstrap