

Wenqing Zheng

2501 Speedway, Austin, TX, 78712

🌐 <https://wenqing-zheng.github.io>

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EDUCATION

The University of Texas at Austin

Ph.D. in Electrical and Computer Engineering

Supervisor: Zhangyang (Atlas) Wang

Austin, TX, U.S.

Dec. 2020 - present

The University of Texas at Austin

M.Sc. in Electrical and Computer Engineering; GPA: 3.83/4.0

Supervisor: Nuria Gonzalez Prelcic

Austin, TX, U.S.

Aug. 2018 - Dec. 2020

Beijing University of Posts and Telecommunications

B.S. in Telecommunications Engineering; GPA: 3.89/4.0

Ranked 5 out of 565

Beijing, China

Sep. 2014 - Jun. 2018

RESEARCH INTERESTS

Reinforcement Learning, Graph Neural Networks, Symbolic Reasoning

PROFESSIONAL EXPERIENCES

Google Cloud

Research Intern

Hosts: Dr. Eric Zhang, Dr. Chelsea Lhull.

- Performance prediction for Google Compute Engine (GCE) towards automated VM configuration.
- Leveraging the VM telemetry features and communication patterns to predict millions per seconds per vCPU accuracy.
- Developed a joint feature/architecture search approach in an algorithm space to reach better performance, trace bottleneck cause through feature label correlation analysis and communication pattern analysis.

Sunnyvale, CA

May.2022 – Aug.2022

Amazon A9

Applied Science Research Intern

Manager/Supervisors: Dr. Nikhil Rao, Dr. Karthik Subbian

- **Cold-start for graph mining and recommendation systems:** helped improve the searching quality on the cold start nodes of Amazon's large scale user-query and product dataset. Leverage the teacher-student architecture for knowledge co-distillation: improve the teacher GCN with novel label embedding, and improve the student MLP with novel attention mechanism to virtual neighborhood nodes. Work submitted to ICLR 2022 as first author.
- **Behavior transfer across different markets:** Graph transfer learning from established markets over transitioning/emerging markets, in order to improve the searching quality of the latter. Partitioning the graph into shared warm start part and unshared part. Using self-supervised learning to improve over unshared part and label propagation to transfer the common knowledge.

Palo Alto, CA

May.2021 – Mar.2022

GEIRI North America

Reinforcement Learning Research Intern

Supervisor: Dr. Jiajun Duan

- Train a Soft Actor-Critic agent to manage large scale power grid: embed the huge discrete geometric actions into continuous space; using Graph Neural Networks as preprocessing; Monte-Carlo Tree search as efficient exploration.

San Jose, CA

May.2020 – Aug.2020

CONFERENCE PUBLICATIONS

- **Wenqing Zheng**, Eddie Huang, Nikhil Rao, Karthik Subbian, and Zhangyang Wang. Cold Brew: Distilling

- Graph Node Representations with Incomplete or Missing Neighborhoods. In *International Conference on Learning Representations (ICLR)*, 2022. [[Openreview link](#)] [[Arxiv link](#)]
- **Wenqing Zheng**, Tianlong Chen, Tingkuei Hu and Zhangyang Wang. Symbolic Learning to Optimize: Making Optimizer Learning More Interpretable and Scalable. In *International Conference on Learning Representations (ICLR)*, 2022. [[Openreview link](#)] [[Arxiv link](#)]
 - **Wenqing Zheng**, Qiangqiang Guo, Hao Yang, Peihao Wang and Zhangyang Wang. Delayed Propagation Transformer: A Universal Computation Engine towards Practical Control in Cyber-Physical Systems. In *Neural Information Processing Systems (NeurIPS)*, 2021. [[Openreview link](#)] [[Arxiv link](#)]
 - Peihao Wang, **Wenqing Zheng**, Tianlong Chen and Zhangyang Wang. Anti-Oversmoothing in Deep Vision Transformers via the Fourier Domain Analysis: From Theory to Practice. In *International Conference on Learning Representations (ICLR)*, 2022. [[Openreview link](#)] [[Arxiv link](#)]
 - S P Sharan, **Wenqing Zheng**, Kuo-feng Xu, Jiarong Xing, Ang Chen and Zhangyang Wang. Symbolic Distillation for Learned TCP Congestion Control. *NeurIPS*, 2022
 - **W Zheng** Anum Ali, Nuria González-Prelcic, RW Heath, Aldebaro Klautau and E Moradi Pari. 5G V2X communication at millimeter wave: rate maps and use cases. In *2020 IEEE 91st Vehicular Technology Conference (VTC2020-Spring)* pages 1-5. IEEE, 2020.
 - **Wenqing Zheng** and Nuria González-Prelcic. Joint Position, Orientation AND Channel Estimation in Hybrid mmWAVE MIMO Systems. In *2019 53rd Asilomar Conference on Signals, Systems, and Computers*, pages 1453–1458. IEEE, 2019.
 - Yaxian Xu, **Wenqing Zheng**, Jingchen Qi and Qi Li. Blind image blur assessment based on markov-constrained fcm and blur entropy. In *2019 IEEE International Conference on Image Processing (ICIP)*, pages 4519-4523. IEEE, 2019.

JOURNAL PUBLICATIONS

- Tianlong Chen, Kaixiong Zhou, Keyu Duan, **Wenqing Zheng**, Peihao Wang, Xia Hu and Zhangyang Wang. Bag of Tricks for Training Deeper Graph Neural Networks: A Comprehensive Benchmark Study. In *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 2021. [[IEEE link](#)] [[Arxiv link](#)]
- Ting-Kuei Hu, Fernando Gama, Tianlong Chen, **Wenqing Zheng**, Zhangyang Wang, Alejandro Ribeiro and Brian M. Sadler. Scalable Perception-Action-Communication Loops with Convolutional and Graph Neural Networks. In *IEEE Transactions on Signal and Information Processing over Networks (TSIPN)*. [[IEEE link](#)] [[Arxiv link](#)]
- Hao Yang, Jianan Zhao, **Wenqing Zheng** and Jianguo Yu. Large Data Throughput Optimization Model with Full C order model Parallel Flow Number Prediction Optical Domain. In *Telecommunication Computing Electronics and Control (TELKOMNIKA)*, 14(2A): 10-17, 2016

SKILLS AND HONORS

- First prize in Chinese National Undergraduate Mathematical Contest (**nation wide**, 30 out of 8k), 2016.
- Champion in China Next-Generation Network Innovation Contest (out of 300 teams nation wide)
- Fluent with Python (Tensorflow, Pytorch, Keras, Scikit-learn), MATLAB, Latex, C++
- Skilled in Transformers, Graph Neural Networks, Reinforcement Learning, symbolic distillation, sparse optimization and Wireless communication.