

ZHUANGDI ZHU

PhD student
Michigan State University

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EDUCATION

Michigan State University, USA

- Ph.D., Computer Science. *Jan 2017 - Present*
- GPA: 4.0/4.0; Served as senior teaching assistant and research assistant.
- Expected graduation date: *September 2022*.

Australian National University, Australia

- Exchange Program, Computer Science. *Jul 2014 - Dec 2014*
- GPA: HD/HD (*High Distinction*).

Nanjing University of Science and Technology, China

- B.S., Computer Science. *Sep 2011 - Jun 2015*
- GPA: 3.74/4.0; *National Scholarship* winner.

RESEARCH INTERESTS

Zhuangdi's research interest resides in the general area of **Machine Learning**. She has developed principled algorithms to facilitate practical applications, including *Algorithmic Trading*, *Human Computer Interaction*, *Internet of Things*, etc. Her current research focus is **Reinforcement Learning** and **Distributed Machine Learning**. Besides *ML*, her previous research experience also involves *Systems* and *Wireless Networking*.

EXPERIENCE

Facebook

PhD Engineer Intern

Jun 2021 - Sep 2021

Remote

- Designed and built ads-ranking models that optimize towards long-term revenues instead of myopic objectives.
- Skills involved: reinforcement learning, Markov decision process.

Facebook

PhD Engineer Intern

Jun 2019 - Aug 2019

Washington, United States

- Delivered online machine learning pipelines to fight against image abuse at facebook Pages.
- Designed and built highly robust classifiers to detect unoriginal image posting in real-time, with back-testing accuracy higher than 90%.
- Skills involved: machine learning, graph theory.

CyberX

Research Intern

Jan 2019 - May 2019

Beijing, China

- Integrated deep machine learning techniques to advance the performance of crypto market making. Research results include:
 - Price prediction for high-frequency trading using recurrent neural networks.
 - Rare volatility prediction using multi-task learning.
 - Fair value determination using graph theory.
- Skills involved: machine learning, market making, graph theory.

Google

PhD Engineer Intern

May 2018 - Aug 2018

California, United States

- Designed a smartwatch platform to enable real-time gesture interactions.
- Implemented a prototype with optical and motion sensors that recognize user gestures in real-time.
- Built a generative model which achieves the gesture detection accuracy of above 96%.
- Skills involved: human-computer interaction, machine learning, signal processing, UX Design.

IBM

Research Intern

Mar 2015 - Jul 2015

Beijing, China

- Enabled FPGA accelerators sharing in the Cloud with RDMA network.
- Implemented FPGA virtualization and remote access in an OpenStack-based cloud.
- Designed FPGA scheduling algorithms based on the M/G/K queue structure.
- Skills involved: hardware acceleration, resource virtualization, cloud scheduling.

PUBLICATIONS

1. **Zhuangdi Zhu**, Junyuan Hong, and Jiayu Zhou. **Data-Free Knowledge Distillation for Heterogeneous Federated Learning**. Proceedings of the 38-th *International Conference on Machine Learning*, PMLR 139, 2021.
2. Junyuan Hong, **Zhuangdi Zhu**, and Jiayu Zhou. **Federated Adversarial Debiasing for Fair and Transferable Representations**. Proceedings of the 27th *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*. 2021.
3. Xiaoyu Ji, Yushi Cheng, Wenyuan Xu, Yuehan Chi, Hao Pan, **Zhuangdi Zhu**, Chuang-Wen You, Yi-Chao, and Lili Qiu. **No Seeing is Also Believing: Electromagnetic-emission-based Application Guessing Attacks via Smartphones**. *IEEE Transactions on Mobile Computing* 2021.
4. **Zhuangdi Zhu**, Kaixiang Lin, Bo Dai, and Jiayu Zhou. **Off-Policy Imitation Learning from Observations**. 34th Conference on *Neural Information Processing Systems (NeurIPS 2020)*.
5. **Zhuangdi Zhu**, Kaixiang Lin, and Jiayu Zhou. **Transfer Learning in Deep Reinforcement Learning: A Survey**. arXiv preprint arXiv:2009.07888 (2020).
6. **Zhuangdi Zhu**, Kaixiang Lin, Bo Dai, and Jiayu Zhou. **Learning Sparse Rewarded Tasks from Sub-Optimal Demonstrations**. arXiv preprint arXiv:2004.00530 (2020).
7. Philip Quinn and **Zhuangdi Zhu**. **Sensing Hand Gestures Using Optical Sensors**. US Patent App (16/243,767), 2020.
8. **Zhuangdi Zhu**, Alex X. Liu, Fan Zhang, and Fei Chen. **FPGA Resource Pooling in Cloud Computing**. *IEEE Transactions on Cloud Computing*, 2019.
9. Zhangjie, Fu, Jiashuang Xu, **Zhuangdi Zhu**, Alex X. Liu, and Xingming Sun. **Writing in the Air with WiFi Signals for Virtual Reality Devices**. *IEEE Transactions on Mobile Computing*, vol. 18, no. 2, pp. 473-484, 1 Feb. 2019.
10. Zhao, Yangming, Chen Tian, **Zhuangdi Zhu**, Jie Cheng, Chunming Qiao, and Alex X. Liu. **Minimize the Make-span of Batched Requests for FPGA Pooling in Cloud Computing**. *IEEE Transactions on Parallel and Distributed Systems*, vol. 29, no. 11, pp. 2514-2527, 1 Nov. 2018.
11. **Zhuangdi Zhu**, Yi-Chao Chen, Fan Zhang, and Chuang-Wen You. **MagAttack: Remote App Sensing with Your Phone**. In *Proceedings of the 18th ACM International Joint Conference on Pervasive and Ubiquitous Computing (UBICOMP)*, 2016.