ZHUANGDI ZHU

PhD student
Michigan State University

Email: zhuzhuan@msu.edu
Homepage: zhuangdizhu.github.io

EDUCATION

Michigan State University, USA
- Ph.D., Computer Science — *Jan 2017 - Present*
- GPA: 4.0/4.0; Senior teaching assistant.

Australian National University, Australia
- Exchange Program, Computer Science — *July 2014 - Dec 2014*
- GPA: HD/HD* (**High Distinction*).

Nanjing University of Science and Technology, China
- B.S., Computer Science — *Sept 2011 - June 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*.

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 Trasnferable 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*, in press, 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 (Extended Abstract).** In *Proceedings of the 18th ACM International Joint Conference on Pervasive and Ubiquitous Computing (UBICOMP)*, 2016.

EXPERIENCE

Facebook *June 2019 - Aug 2019*
PhD Engineer Intern *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 *Jan 2019 - May 2019*
Research Intern *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 *May 2018 - Aug 2018*
PhD Engineer Intern *California, United States*

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

Huawei FNTL *Mar 2016 - Aug 2016*
Research Asssociate *Hong Kong, China*

· Leaded a research which leverages a mobile phone to track the user operations of a nearby laptop.
· Applied machine learning to detect user operations such as opening applications or web pages.
· Skills involved: machine learning, side channel attack, wireless networking, signal processing.

IBM *Mar 2015 - Jul 2015*
Research Intern *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.