

ZHUANGDI ZHU

PhD student
Department of Computer Science and Engineering
Michigan State University

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EDUCATION

Michigan State University, USA

- Ph.D., Computer Science
- GPA: 4.0/4.0; Senior teaching assistant.

Jan 2017 - Present

Australian National University, Australia

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

July 2014 - Dec 2014

Nanjing University of Science and Technology, China

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

Sept 2011 - June 2015

RESEARCH INTERESTS

Zhuangdi's research interest lies on *machine learning* (ML). She has been dedicated to develop effective models and principled algorithms to facilitate practical ML applications, including *algorithmic trading*, *Human Computer Interaction*, *Internet of Things*, etc. Her current research focus is *reinforcement learning*, especially *imitation learning*. Besides *ML*, her previous research experience also involves *systems* and *wireless networking*.

EXPERIENCE

Facebook

- Software Engineer Intern

June 2019 - Aug 2019
Washington, United States

- Delivered online machine learning pipelines to fight against the 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, database, Java, PHP, SQL, and Python.

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, data science, graph theory, Python, Docker.

Google

- Software Engineer Intern

May 2018 - Aug 2018
California, United States

- Designed a smartwatch platform to enable realtime gesture interactions.
- Implemented a prototype with PPG and IMU sensors that recognizes user gestures in real time.
- Built a generative model which achieve the gesture detection accuracy of above 96%.
- Skills involved: HCI, machine learning, signal processing, UI/UX Design, Java, and Python.

Huawei FNTL
- Research Intern

Mar 2016 - Aug 2016
Hong Kong, China

- Worked on a side channel attack project which leverages a mobile phone to track the user operations of a nearby laptop.
- Applied signal processing and machine learning techniques to detect user operations such as opening applications or web pages.
- Skills involved: machine learning, wireless networking, signal processing, Python, Shell, and Matlab.

IBM
- Research Intern

Mar 2015 - Jul 2015
Beijing, China

- Participated in a project which enables 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, C/C++, Python, and Shell.

PUBLICATIONS

1. **Zhuangdi Zhu**, Kaixiang Lin, Bo Dai, and Jiayu Zhou. “Off-Policy Imitation Learning from Observations.” 34th Conference on *Neural Information Processing Systems (NeurIPS 2020)*.
2. **Zhuangdi Zhu**, Kaixiang Lin, Bo Dai, and Jiayu Zhou. “Learning Sparse Rewarded Tasks from Sub-Optimal Demonstrations.” Under review.
3. Philip Quinn and **Zhuangdi Zhu**. “Sensing Hand Gestures Using Optical Sensors.” US Patent App (16/243,767), 2020.
4. **Zhuangdi Zhu**, Alex X. Liu, Fan Zhang, and Fei Chen. “FPGA Resource Pooling in Cloud Computing.” *IEEE Transactions on Cloud Computing*, in press, 2019.
5. Yushi Cheng, Xiaoyu Ji, Wenyan, Hao Pan, **Zhuangdi Zhu**, Chuang-Wen You, Yi-Chao, and Lili Qiu. “MagAttack: Guessing Application Launching and Operation via Smartphone.” *Proceedings of the ACM Asia Conference on Computer and Communications Security (AsiaCCS)*, 2019.
6. 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.
7. 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.
8. **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.