Zhiming Xu

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Education

University of Virginia — Charlottesville, VA
Master of Computer Science. GPA: 4.0/4.0 — *Aug. 2021 – May 2023 (Expected)*
Doctor of Philosophy. Research area: data mining and self-supervised learning — *Aug. 2021 – May 2022 (Withdrawn)*

Nanjing University — Nanjing, Jiangsu
Bachelor of Science in Computer Science, Elite Program (top 10% in NJU) — *Sep. 2016 – Jun. 2020*

University of California, Berkeley — Berkeley, CA
Visiting Student in Computer Science — *Jan. 2019 – May 2019*

Publications

- Shuang Zhou, Qiaoyu Tan, **Zhiming Xu**, Xiao Huang, Fu-Lai Chung, Subtractive Aggregation for Attributed Network Anomaly Detection, *ACM International Conference on Information and Knowledge Management* (CKIM), 2021
- **Zhiming Xu**, Xiao Huang, Yue Zhao, Yushun Dong, Jundong Li, Contrastive Attributed Network Anomaly Detection with Data Augmentation, *Pacific-Asia Conference on Knowledge Discovery and Data Mining* (PAKDD), 2022. code

Working Experiences

R&D Engineer Intern — May 2020 – Sep. 2020
Lightspeed and Quantum Studios Group, Tencent Games — *Shenzhen, Guangdong*
Mentor: Bohan Zhan
- Scraped a dozen of live-streaming/social platforms to obtain multilingual corpus on certain mobile games
- Wrote scripts to automatically access cloud database and built web application to visualize stored data with flask
- Applied natural language processing models to analyze players' opinions on newly released games

Software Engineer Intern — Jul. 2019 – Sep. 2019
China Global Store, Amazon — *Chaoyang, Beijing*
Line Manager: Xin Ren
- Wrote Python scripts to manipulate data stored in DynamoDB and generate business reports
- Finalized A/B tests of China retail websites, delivered the desirable behavior to millions of end users
- Expanded machine learning-backed features to newly launched marketplaces in development environments

Research Assistant — Oct. 2020 – Jun. 2021
Department of Computing, The Hong Kong Polytechnic University — *Kowloon, Hong Kong*
Advisor: Assistant Professor Xiao Huang
- Researched on self-supervised anomaly detection, resulting in one premier conference publication (CIKM'21)
- Participated in KDD Cup, built a knowledge graph link prediction model that scaled up to 80 million nodes

Research Assistant — Aug. 2021 – Mar. 2022
Department of Electrical and Computer Engineering, University of Virginia — *Charlottesville, VA*
Advisor: Assistant Professor Jundong Li
- Researched on anomaly detection with contrastive learning, resulting in one premier conference publication (PAKDD'22)
- Designed a graph transformer neural network to predict physical and chemical properties of molecules

Projects

TrustZone Object Detection | *C, ARM64 Assembly, TrustZone* | code
- Build an object detection application inside ARM TrustZone, a trusted executed environment on Android smartphones
- Accept AES-encrypted images from outside TrustZone, decrypt and detect objects on them, then encrypt and return the results

Quora Insincere Question Detector | *Python, MXNet, Flask, AWS* | code | demo
- Implement text classifiers with LSTM, text CNN, and BERT based on 1 million Quora questions
- Fine-tune model structures and parameters. Achieve 99% accuracy in the test set, and develop a demo WebApp with Flask

Particle-based Fluid Simulator | *C++, OpenGL, Physical Engine* | code | demo
- Build a particle engine to simulate particles' mutual interactions caused by both intrinsic and extrinsic forces
- Add lighting effects with shading language, and draw simulated animation with OpenGL

Simplified Operating System | *C, Linux, bash, git* | code
- Develop a simplified OS featured with memory hierarchy, multi-thread scheduling, and locking
- Implement several shell tools, including read-eval-print loop, memory modifier, etc. with Linux system APIs

NJU Emulator | *C, x86 Assembly, Linux, Docker, git*
- Build a reduced x86 emulator, able to simulate the execution of IA32 instructions via C program
- Implement a simplified operation system featured with virtual memory and time-sharing multi-tasking

Skills

Languages: Python, C/C++, Java, JavaScript, Go
Frameworks: PyTorch, TensorFlow, MXNet, Flask, WebSocket
Developer Tools: git, bash, AWS, DynamoDB, Google Cloud Platform, VS Code
Libraries: PyTorch Geometric, Deep Graph Library, pandas, NumPy, Matplotlib, scikit-learn, SciPy