

# Yajie (Lesley) Zhou

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## RESEARCH INTERESTS EDUCATION

Data-driven Networking, Systems and Security

### BOSTON UNIVERSITY

*Sep. 2021 - now*

PhD student in Computer Engineering

- Advisor: Prof. Zaoxing (Alan) Liu

### Korea Advanced Institute of Science and Technology (KAIST) *Aug. 2020*

M.S. in Electrical Engineering

- Advisors: Prof. Yung Yi, Prof. Dongsu Han

### XIDIAN UNIVERSITY

*Jul. 2018*

B.E. in Computer Science and Technology

- Bachelor Dissertation Award: Top 1% in CS Dept.

## PUBLICATIONS

- Automatic Curriculum Generation for Learning Adaptation in Networking  
Zhengxu Xia\*, **Yajie Zhou\***, Francis Y. Yan, Junchen Jiang.  
(\*equal contribution)  
*ACM SIGCOMM, 2022*

## NETWORKING EXPERIENCE

### Privacy-Preserving Network Telemetry System

*Apr. 2022 - Present*

**Advisors:** Prof. Alan Liu, Prof. Ayse Coskun, Prof. Gianluca Stringhini (BU)

**Sponsors:** Red Hat Research (as part of AI4CloudOps project)

**Motivation:** Protect user's differential privacy while keeping high querying accuracy for network operators.

- Protect user's sensitive data by adding noise through the autoencoder model.
- Keep high accuracy for telemetry querying tasks.
- Reduce data retention cost by only saving the ML model with encoded features.

### Data-Driven Advanced Persistent Threats (APT) Analysis

*Nov. 2021 - Present*

**Advisors:** Prof. Alan Liu (BU)

**Motivation:** Provide in-depth attack analysis with limited data in real-world APT scenarios.

- Develop Transformer-based APT detection, with limited labeled data.

- Build fine-grained attack analysis instead of the simple binary classifier (threat vs benign).
- Reconstruct the attack story for security analysts and engineers.

### **Generalizability of DL based Networking Systems** *Sep. 2020 - May. 2022*

**Advisors:** Prof. Junchen Jiang (UChicago), Dr. Francis Yan (MSR)

**Motivation:** How can we improve the generalizability of existing RL based networking systems?

- Propose a novel training framework that enhances the performance and generalization of reinforcement learning (RL) algorithms in networking and systems.
- Improve the performance and generalization of simulation-trained RL algorithms under unseen workloads and in real environments.

### **Video Streaming QoE improvement**

*Oct. 2019 - Aug. 2020*

*M.S. thesis research with Prof. Dongsu Han, Prof. Yung Yi (KAIST)*

**Motivation:** How to adapt to various end user preferences in video streaming?

- Propose a Multi-Objective Reinforcement Learning based adaptive-bitrate framework to optimize QoE for various user preferences.
- Demonstrated a whole Pareto-frontier solution for adaptive user preferences, without the need for hyper-parameter tuning or model retraining.

## **MACHINE LEARNING EXPERIENCE**

### **Reinforcement Learning**

*Sep. 2019 - Feb. 2020*

M.S. Researcher (KAIST)

- Improved applied Multi-Objective Reinforcement Learning with an action-inference module, aiding the RL model to infer a policy without knowing prior objective preferences.
- Develop a communication scheme for Cooperative Multi-Agent Reinforcement Learning in the StarCraft environment.

## **PATENT**

- Zhou, Y. 2020. "Method and Apparatus for Transmitting Video Data." *Korean Patent Application 10-2020-0141018, registered October 2020.*

## **INTERNSHIP**

### **Microsoft Research (Redmond, WA)**

*Exp. Jun. 2023 - Aug. 2023*

Research Internship

### **Tencent Corp. Academy (Xi'an, China)**

*Jun. 2016 - Aug. 2016*

Software Engineer Internship

## **HONORS AND AWARDS**

- **N2Women Young Researcher Fellowship**, 2022
- **SIGCOMM Travel Grants**, Amsterdam, Netherlands, 2022
- **Grad Cohort for Women-CRA Participation**, New Orleans, 2022

## WORKSHOP TALKS

- **CISE Graduate Student Workshop (CGSW 9.0)**  
Boston University, 2023  
**Presenter:** Present the project progress of "Privacy-preserving network telemetry systems".
- **MOC Alliance Workshop**  
Boston University, 2023  
**Poster speaker:** Introduce the AI4CloudOps projects to the audience from industry.

## SERVICE

- **N2Women Young Researcher Meeting Event**  
SIGCOMM, 2022  
**Event host:** Connect mentors from academia and industry with female PhD/Post-docs to share advice for academic career development.

## UNDERGRADS MENTORED

- **BU ECE Senior students:** Nengneng Yu, Haoming Yi, Rashid Kolaghassi, Maxwell Malamut
- **BU ECE Junior students:** Robert D'Antonio

## TEACHING

- **Introduction of Networking (BU EC441)**  
Teaching assistant, Fall 2022, Spring 2023

## SKILLS

Programming Languages: Python, C++,  $\text{\LaTeX}$ .  
Machine Learning Frameworks: PyTorch, Tensorflow, Keras.  
Editor: Emacs, PyCharm, Visual Studio.