

# Yajie (Lesley) Zhou

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## RESEARCH INTERESTS

**Networking, Security and Machine Learning**

## EDUCATION

### BOSTON UNIVERSITY

*Sep. 2021 - now*

PhD student in Computer Engineering

- Advisors: 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

### Telemetry data privacy protection

*Apr. 2022 - Present*

*Research with Prof. Alan Liu (BU)*

**Motivation:** Protect user differential privacy in telemetry data sharing.

- Protect user's sensitive data and differential privacy.
- Keep telemetry data querying ability and save storage space.

### Advanced Persistent Threats (APT) detection

*Nov. 2021 - Present*

*Research with Prof. Alan Liu (BU)*

**Motivation:** Provide in-depth attack analysis with limited data in reality.

- Build NLP-based APT detection system, 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*

*Research with 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*

*Research with Prof. Dongsu Han, Prof. Yung Yi (KAIST)*

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

- Proposed 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.
- Developed 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**

**Tencent Corp. Academy**

*Jun. 2016 - Aug. 2016*

Internship Software Engineer

- Built mobile application on iOS and Android platforms.
- Designed back-end and front-end for a mobile chatting app with Tencent offered APIs, tested among university internet users.

**HONORS AND  
AWARDS**

- **N2Women Young Researcher Fellowship**, 2022
- **SIGCOMM Travel Grants**, Amsterdam, Netherlands, 2022
- **Honorable Mention**, International Interdisciplinary Contest In Modeling, 2017

**SKILLS**

Programming Languages: Python, C++, MATLAB, L<sup>A</sup>T<sub>E</sub>X.

Machine Learning Frameworks: PyTorch, Tensorflow, Keras.

Editor: Emacs, PyCharm, Visual Studio.