

Yajie (Lesley) Zhou

863 Massachusetts Avenue, Cambridge, MA, US, 02139

Email: lesleyzhou339@gmail.com

Website: <https://lesleyzhou.github.io/>

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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).

To appear at ACM SIGCOMM, 2022

NETWORKING EXPERIENCE

Advanced Persistent Threats (APT) detection Systems *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.

Virtual Network Embedding

Feb. 2019 - Feb. 2020

Project supported by the Korean government

- Implemented distributed virtual network embedding systems with coordinated node and link mapping.
- Designed and improved node mapping, link mapping and bandwidth allocation algorithms.
- Evaluated deep learning algorithms for dynamic resource management in virtual network embedding systems.

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

- **First Prize in Shaanxi Province**, China Undergraduate Mathematical Contest in Modeling (CUMCM), 2017
- **Computer and Engineering Scholarship**, Shaanxi Province, 2017

- **Honorable Mention**, International Interdisciplinary Contest In Modeling, 2017

SKILLS

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