Mingli Yu

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Education

- **Ph.D. in Computer Science** — Aug. 2020 ∼ Present
  The Pennsylvania State University, State College, PA

- **M.S. in Computer Science** — Aug. 2018 ∼ May 2020
  The Pennsylvania State University, State College, PA

- **B.S. in Computer Science** — Aug. 2014 ∼ July 2018
  Tsinghua University, Beijing, China

Research interests

Computer vision, maching learning, statistic inference and SDN security

Internship

- **Tsinghua Tong Fang, Ltd.** *Research Intern* — Jan. 2018 ∼ June 2018
  - **Computer Vision Project**: Video retrieval under high streaming rate
  - Implement an application to extract TV station landmarks for retrieval from video at a high streaming rate of 100GB/s and accelerate the SIFT feature point calculation by **unmutual GPU thread warp** design.

- **Tencent, Ltd.** *Research Intern* — June 2017 ∼ Aug. 2017
  - **NLP Project**: Blog recommendation algorithm design
  - Derive a novel recommendation algorithm to push news articles to Tencent's internal Quora-like forum each day, leverage the fact that blogs with short and concise text, attractive figures are more powerful to draw attention and do the feature extractions based on it.

Research Experience

- **Penn State, University Park** *Research Assistant* — May 2020 ∼ Present
  Advisor: Tom La Porta
  - **Network security Project**: Misreport game in SDN load balancing
  - Capture and bound the potential misreport damage from malicious host by **game theory** when load balancing. (Accepted by SecureCom'20)

- **Penn State, University Park** *Research Assistant* — Mar. 2019 ∼ May 2020
  Advisor: Sharon Xiaolei Huang, James Ze Wang
  - **Computer Vision Project**: Stroke detection in emergence room
  - Exploit asymmetric facial motion patterns for stroke detection by **multimodal deep learning**, achieve higher accuracy than clinic doctors.(Accepted by MICCAI'20)

- **Penn State, University Park** *Research Assistant* — Sep. 2018 ∼ May 2020
  Advisor: Ting He, Patrick Drew McDaniel
  - **Network Security Project**: Flow table security in SDN

– Explore potential flow table security issues of OpenFlow, develop **statistic inference** algorithms to leverage the hidden flow table states for efficient Dos attack. (Accepted by INFOCOM'20)

Technical Skills

- C/C++, Python, Java, Swift, C, Javascript

- PyTorch, Matlab, Mininet

- Django, React, Vue, SQL, Android, iOS

Publications

- Quinn K Burke, Patrick McDaniel, Thomas La Porta, **Mingli Yu**, Ting He. Misreporting Attacks Against Load Balancers in Software-Defined Networking. *Mobile Networks and Applications, Springer* (**MONET**), 2021

- **Mingli Yu**, Tian Xie, Ting He, Patrick McDaniel, Quinn K Burke. Flow Table Security in SDN: Adversarial Reconnaissance and Intelligent Attacks. *IEEE/ACM Transactions on Networking* (**TON**), 2021

- Quinn Burke, Patrick McDaniel, Thomas La Porta, **Mingli Yu**, Ting He. Misreporting Attacks in Software-Defined Networking. *International Conference on Security and Privacy in Communication Systems* (**SecureCom**), 2020

- **Mingli Yu**, Tongan Cai, Xiaolei Huang, Kelvin Wong, John Volpi, James Z Wang, Stephen TC Wong. Toward Rapid Stroke Diagnosis with Multimodal Deep Learning. *International Conference on Medical Image Computing and Computer-Assisted Intervention* (**MICCAI**), 2020(Accept rate: 25%)

- **Mingli Yu**, Ting He, Patrick McDaniel, Quinn K Burke. Flow Table Security in SDN: Adversarial Reconnaissance and Intelligent Attacks. *IEEE INFOCOM 2020-IEEE Conference on Computer Communications* (**INFOCOM**), 2020(Accept rate: 18%)

- Yu Zhou, Jun Bi, Cheng Zhang, Bingyang Liu, Zhaogeng Li, Yangyang Wang, **Mingli Yu**. P4DB: On-the-Fly Debugging for Programmable Data Planes. *IEEE/ACM Transactions on Networking*, 2019

- Xiaoying Bai, Kejia Hou, Jun Huang, **Mingli Yu**. Analytic methods in systems and software testing, 2018

Reviewer Experience

- IEEE/ACM Transactions on Networking

Visa Status

F1 (Sep. 2018 ∼ May 2024)