

# Mingli Yu

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## Education

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- **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

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## Research interests

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Computer vision, machine learning, statistic inference, load balancing and network security

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## Internship

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- **Nokia Bell Labs** *Research Intern* Jun. 2022 ~ Aug. 2022
  - **Network Routing Project:** Balanced network routing with respect to link utilization rate
  - Implement an routing algorithm that balances the max link utilization rate and latency to accommodate more network requests during peak hours by **reinforcement learning**.
- **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.

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## Research Experience

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- **Penn State, University Park** *Research Assistant* May 2020 ~ Present  
**Advisor:** [Thomas La Porta](#)
  - **Network security Project:** Misreport in SDN load balancing
  - Applying game theory for adversaries to manipulate network load balancing to learn network traffic characteristics (Accepted by SecureCom’20 and MONET’21)
- **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 and TON'21)

## Technical Skills

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- C/C++, Python, Java, Swift, C, Javascript
- PyTorch, Matlab, Mininet
- Django, React, Vue, SQL, Android, iOS

## Publications

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- **Mingli Yu**, Quinn K Burke, Thomas La Porta, Patrick McDaniel. mMLSnet: Multilevel Security Network With Mobility. *IEEE Military Communications Conference (MILCOM)*, 2023
- Tongan Cai, Haomiao Ni, **Mingli Yu**, Xiaolei Huang, Kelvin Wong, John Volpi, James Z Wang, Stephen TC Wong. DeepStroke: An efficient stroke screening framework for emergency rooms with multimodal adversarial deep learning. *Medical Image Analysis*, 2022
- 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

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- IEEE/ACM Transactions on Networking

## Visa Status and Available Date

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F1 (Sep. 2018 ~ May 2025)

Available Date (May 22 ~ September 1, 2023)