

# Jielun Zhang

Ph.D. candidate

University of Dayton

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## EDUCATION

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<b><i>Ph.D. (ABD) in Electrical Engineering</i></b>	08/2018 – Present
University of Dayton, Dayton, OH	
<ul style="list-style-type: none"><li>Cumulative GPA: 4.00/4.00</li></ul>	
<b><i>M.S. in Electrical Engineering</i></b>	08/2016 – 08/2018
University of Dayton, Dayton, OH	
<ul style="list-style-type: none"><li>Cumulative GPA: 4.00/4.00</li><li>Thesis: Application-Aware Traffic Prediction and User-Aware Quality-of-Experience Measurement in Smart Network</li></ul>	
<b><i>B.S. in Electronic and Computer Engineering Technology</i></b>	07/2015 – 05/2016
University of Dayton, Dayton, OH	
<ul style="list-style-type: none"><li>Cumulative GPA: 3.94/4.00</li><li>Honor graduation: Summa Cum Laude</li></ul>	
<b><i>B.S. in Electrical Engineering</i></b>	09/2012 – 07/2016
Shanghai Normal University, Shanghai, China	

## RESEARCH INTERESTS

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- Artificial Intelligence in Networking
- Network Security and Privacy
- Internet of Things
- Artificial Intelligence assisted Sensor Design

## ACADEMIC EXPERIENCE

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<b><i>Instructor</i></b>	01/2023 - Present
Department of ECE, University of Dayton, Dayton, OH	
<ul style="list-style-type: none"><li>Teach an undergraduate required course</li><li>Design and run lab sessions of an undergraduate course</li></ul>	
<b><i>Research Assistant</i></b>	08/2017 – Present
Department of ECE, University of Dayton, Dayton, OH	
<ul style="list-style-type: none"><li>Conduct research and assist on research proposal writing</li><li>Supervise junior graduate/undergraduate students</li><li>Deliver research seminar to undergraduate students</li></ul>	
<b><i>Academic Assistant</i></b>	
Department of ECE, University of Dayton, Dayton, OH	08/2022 – 01/2023
Department of EMST, University of Dayton, Dayton, OH	08/2016 – 05/2017
<ul style="list-style-type: none"><li>Teaching assistants for lectures and labs</li><li>Assist on course material preparation</li><li>Grade homework assignments and projects</li></ul>	

## PUBLICATIONS

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### *Refereed Journals*

Under submission

1. **Jielun Zhang** and Feng Ye, "Uncertainty-aware Federated Learning for Distributed Network Traffic Classification," in preparation to submit to IEEE Transactions on Parallel and Distributed Systems, 2023.
2. **Jielun Zhang**, Fuhao Li, and Feng Ye, "Towards Quality-Explainable Data Synthesis for AI-based Network Intrusion Detection System," under submission, IEEE Transactions on Network Science and Engineering, 2023.

Published/Accepted

3. **Jielun Zhang**, Fuhao Li, and Feng Ye, "Sustaining the High Performance of AI-based Network Traffic Classification Models," in IEEE/ACM Transactions on Networking, 2022, (early access) doi: 10.1109/TNET.2022.3203227
4. Venkat Kumar, Jiahui Yu, Fuhao Li, **Jielun Zhang**, Feng Ye, and Guru Subramanyam, "Seamless Wireless Communication Platform for Internet of Things Applications," in IEEE Wireless Communications, 2022, (early access) doi: 10.1109/MWC.006.2200097
5. **Jielun Zhang**, Fuhao Li, and Feng Ye, "Network Traffic Clustering with QoS-Awareness," in IEEE/CIC China Communications, vol. 19, no. 3, pp. 202-214, March 2022.
6. **Jielun Zhang**, Feng Ye, and Yi Qian "Intelligent and Application-aware Network Traffic Prediction in Smart Access Gateways", in IEEE Network, vol. 34, no. 3, pp. 264-269, May/June 2020.

### *Refereed Conference Proceedings*

1. **Jielun Zhang**, Shicong Liang, Feng Ye, Rose Qingyang Hu, and Yi Qian. "Towards Detection of Zero-Day Botnet Attack in IoT Networks using Federated Learning." To appear ICC 2023-IEEE International Conference on Communications, pp. 1-6, 2023.
2. Alsulami Khalil, **Jielun Zhang**, and Feng Ye. "Improvement on a Traffic Data Generator for Networking AI Algorithm Development." In GLOBECOM 2021-IEEE Global Communications Conference, pp. 1-6, 2021.
3. Venkat Kumar, Fuhao Li, **Jielun Zhang**, Feng Ye, and Guru Subramanyam. "A Machine Learning Approach to Modulation Detection in Wireless Communications." In NAECON 2021-IEEE National Aerospace and Electronics Conference, pp. 341-347, 2021.
4. Alsulami Khalil, **Jielun Zhang**, and Feng Ye. "A Real Application enabled Traffic Generator for Networking AI Model Development." In ICC 2021-IEEE International Conference on Communications, pp. 1-6, 2021.
5. **Jielun Zhang**, Fuhao Li, and Feng Ye. "An Ensemble-based Network Intrusion Detection Scheme with Bayesian Deep Learning." In ICC 2020-IEEE International Conference on Communications, pp. 1-6, 2020.
6. **Jielun Zhang**, Fuhao Li, Feng Ye, and Hongyu Wu. "Autonomous Unknown-Application Filtering and Labeling for DL-based Traffic Classifier Update," IEEE INFOCOM 2020- IEEE Conference on Computer Communications, 2020, pp. 397-405, 2020. (Acceptance rate: 19.8%)
7. **Jielun Zhang**, Fuhao Li, and Feng Ye. "Autonomous Model Update Scheme for Deep Learning based Network Traffic Classifiers." In GLOBECOM 2019-IEEE Global Communications Conference, pp. 1-6, 2019.

8. Jian Yang, **Jielun Zhang**, Feng Ye, and Xiaohui Cheng. "A UAV based Multi-Object Detection Scheme to Enhance Road Condition Monitoring and Control for Future Smart Transportation." In International Conference on Artificial Intelligence for Communications and Networks, pp. 270-282, 2019.
9. **Jielun Zhang**, Feng Ye, and Yi Qian. "A Distributed Network QoE Measurement Framework for Smart Networks in Smart Cities." In IEEE International Smart Cities Conference (ISC2), pp. 1-7, 2018.

## **GRANT PROPOSAL WRITING EXPERIENCE**

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- Expedite CSI Processing with Lightweight AI in Massive MIMO Communication Systems, supported by the National Science Foundation (NSF 2139569), \$166,520, 03/01/2022 - 02/28/2025.
  - Assist on proposal preparation with preliminary results, literature survey, etc.

## **PROFESSIONAL SERVICES**

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### ***Journal Reviewer***

- IEEE Communications Magazine
- IEEE Wireless Communications
- IEEE Open Journal of the Communications Society
- IEEE Transactions on Vehicular Technology
- IEEE Internet of Things Journal
- IEEE/CIC China Communications
- International Journal of Computing and Digital Systems
- International Journal of Distributed Sensor Networks

### ***Conference Reviewer***

- IEEE International Conference on Communications 2022
- IEEE Global Communications Conference 2021
- IEEE/ACM International Symposium on Quality-of-Service 2021
- IEEE International Conference on Communications 2021
- IEEE International Conference on Computer Communications 2021
- IEEE International Conference on Computing, Networking and Communications 2019

### ***Other Services***

- Webmaster, IEEE National Aerospace & Electronics Conference 2021
- Volunteer, IEEE International Smart Cities Conference 2018

### ***Professional Affiliations***

- IEEE Student Member
- IEEE ComSoc Student Member
- IEEE Young Professionals

## **INDUSTRY EXPERIENCE**

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### ***R&D Engineering Intern***

05/2017 – 08/2017

Branson Ultrasonics, Emerson Electric Co., Danbury, CT

- Design and develop data acquisition system using LabVIEW for the next-generation ultrasonic welding machine
- Build thermal monitoring system for the testing equipment

## AWARDS

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**Graduate Student Summer Fellowship** 04/2021

University of Dayton, Dayton, OH

- Research topic - Sustaining the Intelligence of AI-based Network Traffic Classifiers

**Graduate Student Summer Fellowship** 04/2019

University of Dayton, Dayton, OH

- Research topic - A Learning-based Framework for Packet Classification and Network Traffic Flow Clustering in SDN Access Gateways

**Graduate Student Summer Fellowship** 04/2018

University of Dayton, Dayton, OH

- Research topic - Establish Reliable and Energy Efficient Public Safety Communication Networks using Future Smart Infrastructure

## PRESENTATIONS

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- “Autonomous Unknown-Application Filtering and Labeling for DL-based Traffic Classifier Update”, 2020 IEEE Conference on Computer Communications, Virtual Conference, July 2020.
- “An Ensemble-based Network Intrusion Detection Scheme with Bayesian Deep Learning,” 2020 IEEE International Conference on Communications, Virtual Conference, June 2020.
- “A Learning-based Framework for Packet Classification and Network Traffic Flow Clustering in SDN Access Gateways,” 2020 Brother Joseph W. Stander Symposium, Dayton, OH, April 2020.
- “Autonomous Model Update Scheme for Deep Learning based Network Traffic Classifiers,” 2019 IEEE Global Communications Conference, Waikoloa, HI, December 2019.
- “A UAV Based Multi-object Detection Scheme to Enhance Road Condition Monitoring and Control for Future Smart Transportation,” 2019 EAI International Conference on Artificial Intelligence for Communications and Networks, Harbin, China, May 2019.
- “Establish Reliable and Energy Efficient Public Safety Communication Networks Using Future Smart Infrastructure,” 2019 Brother Joseph W. Stander Symposium, Dayton, OH, April 2019.
- “A Distributed Network QoE Measurement Framework for Smart Networks in Smart Cities,” 2018 IEEE International Smart Cities Conference, Kansas City, MO, September 2018.

## REFERENCES

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### **Feng Ye, Associate Professor**

Department of Electrical and Computer Engineering  
University of Dayton  
(937)-229-2796, fye001@udayton.edu

### **Yi Qian, Professor**

Department of Electrical and Computer Engineering  
University of Nebraska-Lincoln  
(402)-517-5899, yi.qian@unl.edu

### **Rose Hu, Professor**

College of Engineering  
Utah State University  
(435)-797-0322, rose.hu@usu.edu