Aoyu Gong

Contact Information

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Educational Background

Doctor of Philosophy, Networking Systems — *Sep. 2024 – Present*

École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland

- Advisor: Prof. Haitham Hassanieh

Master of Science, Communication Systems — *Sep. 2021 – July 2024*

École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland

- GPA: **5.76/6.00**

Bachelor of Engineering, Communication Engineering — *Sep. 2015 – June 2019*

Nanjing University of Science and Technology, Nanjing, China

- GPA: **3.90/4.00**

Work Experience

Research Intern, Network and Cloud Systems Research Group — *Aug. 2023 – Feb. 2024*

Max Planck Institute for Informatics, Saarbrücken, Germany

- Topic: Understand short-form (TikTok/YouTube) video content using multimodal models

Research Assistant, Visual Intelligence for Transportation Laboratory — *Mar. 2023 – May 2023*

École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland

- Topic: Rethink traditional operations research problems with deep reinforcement learning

Selected Publications

* stands for the equal contributions. A full list can be found here.

12. OpenRIT6G '25 **Aoyu Gong**, Arman Maghsoudnia, Raphael Cannatà, Eduard Vlad, Néstor Lomba Lomba, Dan Mihai Dumitriu, Haitham Hassanieh, "Towards URLLC with Open-Source 5G Software," to appear in *The 1st Workshop on Open Research Infrastructures and Toolkits for 6G*, 2025
11. TCOM Yuqing Zhu, Yiwen Zhu, **Aoyu Gong**, Yan Lin, Yuan-Hsuan Lo, Yijin Zhang, "Age-Gain-Dependent Random Access for Event-Driven Periodic Updating," *IEEE Transactions on Communications*, Early Access, 2025
10. ICWSM '25 **Aoyu Gong**, Sepehr Mousavi, Yiting Xia, Savvas Zannettou, "ClipMind: A Framework for Auditing Short-Format Video Recommendations Using Multimodal AI Models," in *Proceedings of the 19th International AAAI Conference on Web and Social Media*, 2025
9. MobiCom '24 Raphael Cannatà, **Aoyu Gong**, Arman Maghsoudnia, Dan Mihai Dumitriu, Haitham Hassanieh, "SliceGuard: Secure and Dynamic 5G RAN Slicing with WebAssembly," in *Proceedings of the 30th Annual International Conference on Mobile Computing and Networking*, 2024
8. HotNets '24 Arman Maghsoudnia, Eduard Vlad, **Aoyu Gong**, Dan Mihai Dumitriu, Haitham Hassanieh, "Ultra-Reliable Low-Latency in 5G: A Close Reality or a Distant Goal?," in *Proceedings of the 23rd ACM Workshop on Hot Topics in Networks*, 2024

7. SIGCOMM '24 Jialong Li, Haotian Gong, Federico De Marchi, **Aoyu Gong**, Yiming Lei, Wei Bai, Yiting Xia, "Uniform-Cost Multi-Path Routing for Reconfigurable Data Center Networks," in *Proceedings of the ACM SIGCOMM 2024 Conference*, 2024
6. TVT **Aoyu Gong**, Yuan-Hsuan Lo, Yan Lin, Yijin Zhang, "Dynamic Random Access Without Observation Under Deadline-Constrained Periodic Traffic," *IEEE Transactions on Vehicular Technology*, vol. 73, no. 1, pp. 1503–1508, 2024
5. TCOM Yijin Zhang*, **Aoyu Gong***, Lei Deng, Yuan-Hsun Lo, Yan Lin, Jun Li, "Achieving Maximum Urgency-Dependent Throughput in Random Access," *IEEE Transactions on Communications*, vol. 71, no. 11, pp. 6435–6450, 2023
4. TCOM Jingwei Liu, Rui Zhang, **Aoyu Gong**, He Chen, "Optimizing Age of Information in Wireless Uplink Networks with Partial Observations," *IEEE Transactions on Communications*, vol. 71, no. 7, pp. 4105–4118, 2023
3. TNSE **Aoyu Gong**, Yijin Zhang, Lei Deng, Fang Liu, Jun Li, Feng Shu, "Dynamic Optimization of Random Access in Deadline-Constrained Broadcasting," *IEEE Transactions on Network Science and Engineering*, vol. 10, no. 4, pp. 2059–2073, 2023
2. GLOBECOM '20 **Aoyu Gong***, Tong Zhang*, He Chen, Yijin Zhang. "Age-of-Information -Based Scheduling in Multiuser Uplinks with Stochastic Arrivals: A POMDP Approach," in *Proceedings of the 2020 IEEE Global Communications Conference*, 2020
1. TCOM Yijin Zhang, **Aoyu Gong**, Yuan-Hsun Lo, Jun Li, Feng Shu, Wing Shing Wong. "Generalized p-Persistent CSMA for Asynchronous Multiple-Packet Reception," *IEEE Transactions on Communications*, vol. 67, no. 10, pp. 6966–6979, 2019

Awards & Honors

Best Demo Award *Nov. 2024*
- Awarded by ACM MobiCom '24

EDIC Fellowship *Feb. 2024*
- Awarded by École Polytechnique Fédérale de Lausanne

Provincial Best Bachelor Thesis Award *Sep. 2020*
- Awarded by Jiangsu Provincial Department of Education (across all disciplines)

Bachelor of Engineering with Honors *Jun. 2019*
- Awarded by Nanjing University of Science and Technology (**top 5%**)

NJUST Best Bachelor Thesis Award *Jun. 2019*
- Awarded by Nanjing University of Science and Technology (across all disciplines)

National Scholarship (Awarded Three Times) *Nov. 2018 / Nov. 2017 / Nov. 2016*
- Awarded by Ministry of Education of the People's Republic of China (**top 1%**)

NJUST Special-Class Scholarship (Awarded Six Times) *Mar. & Sep. 2018 / 2017 / 2016*
- Awarded by Nanjing University of Science and Technology (**top 1%**)

Interests & Skills

Area of Interest:
- Networked Systems, Wireless Communication, Machine Learning, Stochastic Control

Computer Skills:
- C/C++, Python, MATLAB, VHDL