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Chengzhang Li

I am currently a research scientist at NSF AI-EDGE Institute, the Ohio State University, supervised by Prof. Ness Shroff. I received my Ph.D. degree in Computer Engineering from Virginia Tech in 2022, advised by Prof. Tom Hou. I received my B.S. degree in Electronic Engineering from Tsinghua University in 2017. My current research interests are AI on edge networks, Internet of Things, real-time scheduling in 5G/6G, and network optimization. My email address is li.13488@osu.edu.

Education

2017–2022 Ph.D. in Computer Engineering
M.S. in Computer Engineering (obtained in 2020)
ECE Department at Virginia Tech, Blacksburg, VA
Advisor: Prof. Tom Hou

2013–2017 B.S. in Electronics Engineering
EE Department at Tsinghua University, Beijing, China

Work Experience

2024–Present **Research Scientist, NSF AI-EDGE Institute**,
ECE, OSU. Supervisor: Prof. Ness Shroff.

2023–2024 **Postdoc, NSF AI-EDGE Institute**,
ECE, OSU. Supervisor: Prof. Ness Shroff.

Summer 2022 **Software Engineer**,
NVIDIA Corporation, Santa Clara, CA.

Awards

2025 **Distinguished TPC Member Award,** *IEEE INFOCOM 2025*.

2022 **Best Paper Award Candidate,** *IEEE MILCOM 2022*.

2021 **Student Conference Award,** *IEEE INFOCOM*.

2020 **Student Conference Award,** *IEEE INFOCOM*.

2019 **Student Travel Grant,** *IEEE ICDCS*.

Teaching

Summer 2025 **Lecturer**
Computer Networks, AI-EDGE REU Program.

Fall 2017 & Spring 2018 **Teaching Assistant**
ECE 2704 Signal & Systems, Virginia Tech.

Professional Services

Conference TPC: *IEEE INFOCOM 2026, 2025, 2024*.

Reviewer: *IEEE/ACM ToN, IEEE TIT, IEEE TWC, IEEE TNSE, IEEE ISIT, IEEE Comm. Magazine, AAAI AI Magazine, Nature Scientific Reports*.

Publications

Journal Articles

1. **Chengzhang Li**, Shaoran Li, Qingyu Liu, Y Thomas Hou, Wenjing Lou, and Sastry Kompella, "Eywa: A General Framework for Scheduler Design in AoI Optimization," *IEEE Internet of Things Journal*, vol. 12, no. 14, pp. 26255–26269, July. 2025.
2. **Chengzhang Li**, Qingyu Liu, Shaoran Li, Yongce Chen, Y Thomas Hou, Wenjing Lou, and Sastry Kompella, "Scheduling With Soft Age of Information Deadlines," *IEEE Internet of Things Journal,* vol. 12, no. 6, pp. 7133–7148, Mar. 2025.
3. **Chengzhang Li**, Qingyu Liu, Y. Thomas Hou, Wenjing Lou, and Sastry Kompella, "Aequitas: A 5G Scheduler for Minimizing Outdated Information in IoT Networks," *IEEE Internet of Things Journal,* vol. 11, no. 13, pp. 23322–23335, July. 2024.
4. **Chengzhang Li**, Qingyu Liu, Shaoran Li, Yongce Chen, Y. Thomas Hou, Wenjing Lou, and Sastry Kompella, "Scheduling with Age of Information Guarantee," *IEEE/ACM Transactions on Networking,* vol. 30, no. 5, pp. 2046–2059, Oct. 2022.
5. **Chengzhang Li**, Yan Huang, Shaoran Li, Yongce Chen, Brian A. Jalaian, Y. Thomas Hou, Wenjing Lou, Jeffrey H. Reed, and Sastry Kompella, "Minimizing AoI in a 5G-based IoT Network under Varying Channel Conditions," *IEEE Internet of Things Journal,* vol. 8, no. 19, pp. 14543–14558, Oct. 2021.
6. **Chengzhang Li**, Shaoran Li, Yongce Chen, Y. Thomas Hou, and Wenjing Lou, "Minimizing Age of Information under General Models for IoT Data Collection," *IEEE Transactions on Network Science and Engineering*, vol. 7, no. 4, pp. 2256–2270, Oct. 2020.
7. Shaoran Li, Nan Jiang, **Chengzhang Li**, Shiva Acharya, Yubo Wu, Weijun Xie, Wenjing Lou, and Y Thomas Hou, " Real-time MU-MIMO Beamforming with Limited Channel Samples in 5G Networks," *IEEE Transactions on Mobile Computing,* accepted, 2025.
8. Yubo Wu, **Chengzhang Li**, Y Thomas Hou, Wenjing Lou, "A Real-Time Super-Resolution DoA Estimation Algorithm for Automotive Radar Sensor," *IEEE Sensors Journal,* vol. 24, no. 22, pp. 37947–37961, Nov. 2024.
9. Peizhong Ju, **Chengzhang Li** (co-first author), Yingbin Liang, and Ness Shroff, "AI-EDGE: An NSF AI institute for future edge networks and distributed intelligence," *AI Magazine,* vol. 45, no. 1, pp. 29–34, Mar. 2024.
10. Naru Jai, Yi Shi, Shaoran Li, **Chengzhang Li**, Y Thomas Hou, Wenjing Lou, Jeffrey H Reed, Masoud Olfat, Sastry Kompella, and Luiz DaSilva, "Modeling and Optimization of Channel Allocation for PAL and GAA Users in the CBRS Band," *IEEE Transactions on Cognitive Communications and Networking,* vol. 10, no. 1, Feb. 2024.
11. Qingyu Liu, **Chengzhang Li**, Y. Thomas Hou, Wenjing Lou, Jeffery H. Reed, and Sastry Kompella, "Aion: A Bandwidth Conserving Scheduler with Data Freshness Guarantee," *IEEE Transactions on Mobile Computing,* vol. 23, no. 1, pp. 102–116, Jan. 2024.
12. P. Kheirkhah Sangdeh, **Chengzhang Li**, Hossein Pirayesh, Shichen Zhang, Huacheng Zeng, and Y. Thomas Hou, "CF4FL: A Communication Framework for Federated Learning in Transportation Systems," *IEEE Transactions on Wireless Communications,* vol. 22, no. 5, pp. 3821–3836, June 2023.
13. Shaoran Li, **Chengzhang Li**, Yan Huang, Brian Jalaian, Y. Thomas Hou, and Wenjing Lou, "Enhancing Resilience in Mobile Edge Computing with Processing Uncertainty," *IEEE Journal on Selected Areas in Communications,* vol. 41, no. 3, pp. 659–674, Mar. 2023.
14. Yongce Chen, Yan Huang, **Chengzhang Li**, Y. Thomas Hou, and Wenjing Lou, "Turbo-HB: A Sub-millisecond Hybrid Beamforming Design for 5G mmWave Systems," *IEEE Transactions on Mobile Computing*, vol. 22, no. 7, pp. 4332–4346, July 2023.

15. Yongce Chen, Shaoran Li, **Chengzhang Li**, Huacheng Zeng, Brian Jalaian, Y. Thomas Hou, and Wenjing Lou, "On DoF Conservation in MIMO Interference Cancellation based on Signal Strength in the Eigenspace," *IEEE Transactions on Mobile Computing,* vol. 22, no. 5, pp. 2862–2877, May 2023.
16. Shaoran Li, Yan Huang, **Chengzhang Li**, Y. Thomas Hou, Wenjing Lou, Brian Jalaian, and Stephen Russell, "Achieving Real-Time Spectrum Sharing in 5G Underlay Coexistence with Channel Uncertainty," *IEEE Transactions on Mobile Computing*, vol. 22, no. 4, pp. 1922–1937, Apr. 2023.
17. Darshan A. Ravi, Vijay K. Shah, **Chengzhang Li**, Y. Thomas Hou and Jeffrey H. Reed, "RAN Slicing in Multi-MVNO Environment under Dynamic Channel Conditions," *IEEE Internet of Things Journal*, vol. 9, no. 6, pp. 4748–4757, March 2022.
18. Shaoran Li, Yan Huang, **Chengzhang Li**, Brian A Jalaian, Y. Thomas Hou, Wenjing Lou, and Stephen Russell, "Maximize Spectrum Efficiency in Underlay Coexistence With Channel Uncertainty," *IEEE/ACM Transactions on Networking*, vol. 29, no. 2, pp. 764–778, April 2021.
19. Yan Huang, Shaoran Li, **Chengzhang Li**, Y. Thomas Hou, and Wenjing Lou, "A Deep Reinforcement Learning-based Approach to Dynamic eMBB/URLLC Multiplexing in 5G NR," *IEEE Internet of Things Journal*, vol. 7, no. 4, pp. 6439–6456, July 2020.

Conference Papers

1. **Chengzhang Li**, Peizhong Ju, Atilla Eryilmaz, and Ness B. Shroff, "Two Levels Are All You Need: Simplifying Data Compression for Timely Edge Classification," accepted by *ACM MobiHoc*, 2025.
2. **Chengzhang Li**, Peizhong Ju, Atilla Eryilmaz, and Ness B. Shroff, "Efficient Multi-dimensional Compression for Network-edge Classification," in Proc. *ACM MobiHoc,* pp. 91–100, Athens, Greece, Oct. 7–10, 2024.
3. **Chengzhang Li**, Shaoran Li, Qingyu Liu, Y. Thomas Hou, Wenjing Lou, and Sastry Kompella, "Eywa: A general approach for scheduler design in AoI optimization," in Proc. *IEEE INFOCOM,* 9 pages, New York, USA, May 17–20, 2023.
4. **Chengzhang Li**, Qingyu Liu, Y. Thomas Hou, Wenjing Lou, Jeffery H. Reed, and Sastry Kompella, "Aequitas: A Uniformly Fair 5G Scheduler for Minimizing Outdated Information," *IEEE MASS*, pp. 180–187, Denver, CO, Oct. 20–22, 2022.
5. **Chengzhang Li**, Qingyu Liu, Shaoran Li, Yongce Chen, Y. Thomas Hou, and Wenjing Lou, "On Scheduling with AoI Violation Tolerance," in Proc. *IEEE INFOCOM,* 9 pages, virtual conference, May 10–13, 2021.
6. **Chengzhang Li**, Shaoran Li, Yongce Chen, Y. Thomas Hou, and Wenjing Lou, "AoI Scheduling with Maximum Thresholds," in Proc. *IEEE INFOCOM,* pp. 436–445, virtual conference, July 6–9, 2020.
7. **Chengzhang Li**, Yan Huang, Yongce Chen, Brian Jalaian, Y. Thomas Hou, and Wenjing Lou, "Kronos: A 5G Scheduler for AoI Minimization under Dynamic Channel Conditions," in Proc. *IEEE ICDCS,* pp. 1466–1475, Dallas, TX, July 7–10, 2019.
8. **Chengzhang Li**, Shaoran Li, and Y. Thomas Hou, "A General Model for Minimizing Age of Information at Network Edge," in Proc. *IEEE INFOCOM,* pp. 118–126, Paris, France, April 29–May 2, 2019.
9. Sunjung Kang, **Chengzhang Li**, Atilla Eryilmaz, and Ness B. Shroff, "Balancing Current and Historical State Information in Remote Tracking Systems: A Randomized Update Approach," *IEEE INFOCOM ASoI Workshop,* Vancouver, Canada, May 20, 2024.
10. Jihoon Yun, **Chengzhang Li**, Anish Arora, "PAMLR: A Passive-Active Multi-Arm Bandit-Based Solution for LoRa Channel Allocation," *ACM BuildSys,* Istanbul, Turkey, Nov. 15–16, 2023.

11. Qingyu Liu, **Chengzhang Li**, Y. Thomas Hou, Wenjing Lou, and Sastry Kompella, "Age of Critical Information: Optimizing Data Freshness Based on Content Criticalitym," *IEEE MILCOM,* Boston, MA, USA, Oct. 30–Nov. 3, 2023.
12. Heng Jin, Qingyu Liu, **Chengzhang Li**, Y. Thomas Hou, Wenjing Lou, and Sastry Kompella, "Hector: A Reinforcement Learning-Based Scheduler for Minimizing Casualties of a Military Drone Swarm," *IEEE MILCOM,* National Capital Region, USA, Nov. 28–Dec. 2, 2022.
13. Qingyu Liu, **Chengzhang Li**, Y. Thomas Hou, Wenjing Lou, Jeffrey Reed, and Sastry Kompella, "Ao^{2}I: Minimizing Age of Outdated Information to Improve Freshness in Data Collection," in Proc, *IEEE INFOCOM,* virtual conference, May 2–5, 2022.
14. Yubo Wu, **Chengzhang Li**, Y. Thomas Hou, and Wenjing Lou, "Real-time DoA Estimation for Automotive Radar," in Proc. *European Microwave Conference,* London, UK, April 2–7, 2022.
15. Naru Jai, Shaoran Li, **Chengzhang Li**, Y. Thomas Hou, Wenjing Lou, Jeffrey Reed, and Sastry Kompella, "Optimal Channel Allocation in the CBRS Band with Shipborne Radar Incumbents," in Proc. *IEEE DySPAN,* pp. 80–88, Los Angeles, CA, Dec. 13–15, 2021.
16. Shaoran Li, **Chengzhang Li**, Yan Huang, Brian A Jalaian, Y Thomas Hou, Wenjing Lou, "Task Offloading with Uncertain Processing Cycles," in Proc. *ACM MobiHoc,* pp. 51–60, Shanghai, China, July 26–29, 2021.
17. Qingyu Liu, **Chengzhang Li**, Y. Thomas Hou, Wenjing Lou, and Sastry Kompella, "Aion: A Bandwidth Optimized Scheduler with AoI Guarantee," in Prof. *IEEE INFOCOM,* 10 pages, virtual conference, May 10–13, 2021.
18. Yongce Chen, Yan Huang, **Chengzhang Li**, Y. Thomas Hou, and Wenjing Lou, "Turbo-HB: A Novel Design and Implementation to Achieve Ultra-Fast Hybrid Beamforming," in Proc. *IEEE INFOCOM,* pp. 1489–1498, virtual conference, July 6–9, 2020.
19. Shaoran Li, Yan Huang, **Chengzhang Li**, Brian Jalaian, Stephen Russell, Y. Thomas Hou, Wenjing Lou, and Benjamin MacCall, "A Real-Time Solution for Underlay Coexistence with Channel Uncertainty," in Proc. *IEEE GLOBECOM,* 6 pages, Waikoloa, HI, Dec. 9–13, 2019.
20. Shaoran Li, Yan Huang, **Chengzhang Li**, Brian A. Jalaian, Y. Thomas Hou, and Wenjing Lou, "Coping Uncertainty in Coexistence via Exploitation of Interference Threshold Violation," in Proc. *ACM MobiHoc,* pp. 71–80, Catania, Italy, July 2–5, 2019.
21. Yongce Chen, Shaoran Li, **Chengzhang Li**, Y. Thomas Hou, and Brian Jalaian, "To Cancel or Not to Cancel: Exploiting Interference Signal Strength in the Eigenspace for Efficient MIMO DoF Utilization," in Proc. *IEEE INFOCOM,* pp. 1954–1962, Paris, France, April 29–May 2, 2019.

Patents

1. Wireless Transmission Error Rate Prediction, US Patent Application No. 2025/0080256 A1, invented by **Chengzhang Li**, Yan Huang, Christian Ibars Casas, James Hansen Delfeld, and Nidhi Tomar, filed by Nvidia Corp at Aug. 31, 2023, published at Mar. 6, 2025.
2. Signal-to-Noise Ratio Adjustment, US Patent Application No. 2025/0211344 A1, invented by **Chengzhang Li**, Yan Huang, Christian Ibars Casas, James Hansen Delfeld, and Nidhi Tomar, filed by Nvidia Corp at Dec. 21, 2023, published at June 26, 2025.

References

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