

YUE CUI

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🏠 [ycui26.github.io](https://github.com/ycui26)

🎓 [Google Scholar](#)

EDUCATION

Northwestern University <i>Visiting Student, Electrical and Computer Engineering (Advisors: Dr. Randall Berry and Dr. Ermin Wei)</i>	Sept 2025 - Feb 2026 Evanston, IL, U.S.
City University of Hong Kong (CityU) <i>Ph.D. Candidate, Computer Science (Advisor: Dr. Man Hon Cheung)</i>	Aug 2022 - Aug 2026 Hong Kong SAR
University of Tennessee, Knoxville (UTK) <i>Research Assistant, Electrical Engineering and Computer Science (Advisor: Dr. Jian Liu)</i>	Sept 2021 - May 2022 Knoxville, TN, U.S.
University of Electronic Science and Technology of China (UESTC) <i>Bachelor in Computer Science and Technology, Double Major in Finance, GPA: 3.92/4.0</i>	Sept 2017 - Jun 2021 Chengdu, Sichuan, China

RESEARCH INTERESTS

- **Trustworthy AI:** machine unlearning, federated learning, adversarial attack and defense
- **Network Optimization:** incentive mechanism design, game theory, online stochastic optimization

SELECTED PUBLICATIONS

1. [Yue Cui](#) and Man Hon Cheung. “**The Price of Forgetting: Incentive Mechanism Design for Machine Unlearning.**” 2025 IEEE Transactions in Mobile Computing (TMC) ([PDF](#))
2. [Yue Cui](#), Ningning Ding, and Man Hon Cheung. “**AoI-aware Federated Unlearning for Streaming Data with Online Client Selection and Pricing.**” 2025 IEEE International Conference on Computer Communications (INFOCOM’25) (Acceptance Rate: 18.6%) ([PDF](#))
3. [Yue Cui](#) and Man Hon Cheung. “**The Price of Forgetting: Data Redemption Mechanism Design for Machine Unlearning.**” 2024 IEEE International Conference on Communications (ICC’24) ([PDF](#))
4. Ni Yang, [Yue Cui](#), and Man Hon Cheung. “**Contract Design for Adaptive Federated Learning.**” 2024 IEEE Global Communications Conference (GLOBECOM’24) ([PDF](#))
5. [Yue Cui](#), Syed Irfan Ali Meerza, Zhuohang Li, Luyang Liu, Jiaxin Zhang, and Jian Liu. “**RecUP-FL: Reconciling Utility and Privacy in Federated learning via User-configurable Privacy Defense.**” 2023 ACM Asia Conference on Computer and Communications Security (ASIA CCS’23) (Acceptance Rate: 17.1%) ([PDF](#))
6. [Yue Cui](#), Zhuohang Li, Luyang Liu, Jiaxin Zhang, Jian Liu. “**Privacy-preserving speech-based depression diagnosis via federated learning.**” 2022 44th Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC’22) (Student Paper Competition Finalist) ([PDF](#))

RESEARCH EXPERIENCE

Visiting Student Northwestern University <i>Advisors: Dr. Randall Berry and Dr. Ermin Wei</i>	Sept 2025 – Feb 2026 Evanston, IL, U.S.
<ul style="list-style-type: none">• Developed a defense mechanism against backdoor attacks using federated unlearning; Analyzed the attacking and defending game between attackers (clients) and the server; Achieved a higher social welfare and clients’ total utility compared with multiple baselines.	
Ph.D. Candidate City University of Hong Kong <i>Advisor: Dr. Man Hon Cheung, Collaborator: Dr. Ningning Ding</i>	Aug 2022 – Present Hong Kong SAR
<ul style="list-style-type: none">• Addressed concept drift of streaming data by Age of Information (AoI)-aware federated unlearning for the first time; Proposed an efficient federated unlearning algorithm and theoretically characterized the unlearned model’s loss optimality bound; Formulated an online model performance optimization problem and approximated it by Lyapunov optimization; Proposed a reverse auction mechanism for	

truthful reporting of fresh data collection cost; Proved the sublinear bound for our algorithm's asymptotic performance; Achieved **better model accuracy** on real datasets than state-of-the-arts methods.

- Designed the **first incentive mechanism in centralized machine unlearning** for compensating retained data; Balanced the trade-off between the data privacy and model performance in machine unlearning; Characterized model accuracy degradation and consumed time functions on real datasets; Proved the distributed convergence of best responses updates to the **unique Nash Equilibrium** for **users' non-cooperative data redemption game**; Achieved a **higher social welfare** compared with current data regulations on real datasets.
- Proposed an efficient threshold-based verification algorithm in machine unlearning; Characterized the relationship between verified and deleted data amount on real datasets; Analyzed the **first verification game** in machine unlearning; Proposed an algorithm for equilibrium convergence based on fictitious play; **Enhanced the 'Right-To-Be-Forgotten' regulation** for the government on real datasets.

Research Assistant | University of Tennessee, Knoxville

Sept 2021 - May 2022

Advisor: Dr. Jian Liu

Knoxville, TN, U.S.

- Proposed the **first speech-based depression diagnosis model** in federated learning and integrated various secure aggregation methods.
- Developed a **personalized defense algorithm in federated learning** against data reconstruction attack and attribute inference attack on **user-specific attributes** by selectively adding neuron-wise perturbations on model updates.

TEACHING EXPERIENCE

- **Teaching Assistant** of CS3402 Database Systems, CityU, 2023 - 2026 Spring
- **Teaching Assistant** of CS5222 Computer Network and Internets, CityU, 2023 - 2024 Fall
- **Teaching Assistant** of CS1302 Introduction to Programming, CityU, 2022 Fall
- **Supervision of Final Year Project (FYP)** Depression diagnosis via Federated Learning, UTK, 2021 Fall
- **Teaching Assistant** of Virtual Simulation of Unmanned Aerial Vehicle (UAV), UESTC, 2019 Spring

SERVICES

- **Journal Reviewer:** IEEE/ACM Transactions on Networking (ToN)
- **Sub-reviewer:** IEEE Transactions on Mobile Computing (TMC), IEEE Internet of Things Journal (IoTJ), IEEE INFOCOM 2024 - 2026, ACM SIGKDD 2022

AWARDS AND HONORS

- **Research Tuition Scholarship (RTS)**, City University of Hong Kong, \$42,000, 2024 - 2025
- **Research Activities Fund (RAF)**, City University of Hong Kong, \$30,000, 2025
- **Student Travel Grant**, IEEE ICC, \$1000, 2024
- **Student Paper Competition Finalist**, IEEE EMBC, Only 1 in North America, 2022
- **Tennessee's Top 100 Fellowship**, \$10,000 per year, University of Tennessee, 2021
- **The Outstanding Student of 2019**, School of Computer Science and Engineering, UESTC, 2019

REFERENCES

Dr. Man Hon Cheung | Assistant Professor, City University of Hong Kong

Email: mhcheung@cityu.edu.hk | Website | Relationship: Ph.D. Advisor

Dr. Randall Berry | Chair and Professor, Northwestern University

Email: rberry@northwestern.edu | Website | Relationship: Host Professor

Dr. Ermin Wei | Associate Professor, Northwestern University

Email: ermin.wei@northwestern.edu | Website | Relationship: Host Professor