# Yu Qiao

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## Research Areas

**I am currently a Research Professor at the School of Computing, Kyung Hee University (KHU), South Korea.** My research interests include efficient & trustworthy AI, federated learning, adversarial machine learning, and generative artificial intelligence (AIGC). I have published multiple papers in high-impact Q1 SCI journals such as Information Fusion, IEEE TNSE, IEEE TNSM, Neural Networks, and IEEE IoTJ, as well as in international conferences including IEEE ICC, IEEE NOMS, IEEE APNOMS.

## Education and Work Experience

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|---|---|---|
| **2025.09 – Present** | Research Professor | Kyung Hee University |
| **2022.03 - 2025.08** | Ph.D. | Kyung Hee University |
| **2019.07 - 2022.03** | R&D Engineer | Spreadtrum Communications (Shanghai) Co., Ltd. |
| **2016.09 - 2019.06** | Master | Nanjing University of Information Science & Technology |

## Selected Works After 2020

### Journal Papers as First Author:

1. **Yu Qiao**, H. Q. Le, M. Zhang, A. Adhikary, C. Zhang, and C. S. Hong, "FedCCL: Federated dual-clustered feature contrast under domain heterogeneity," ***Information Fusion (INFFUS)***, JCR Q1, 2025.

2. **Yu Qiao**, M. S. Munir, A. Adhikary, H. Q. Le, A. D. Raha, C. Zhang, C. S. Hong, "MP-FedCL: Multiprototype Federated Contrastive Learning for Edge Intelligence," ***IEEE Internet of Things Journal (IEEE IoTJ)***, JCR Q1, 2024.

3. **Yu Qiao**, C. Zhang, A. Adhikary, and C. S. Hong, "Logit Calibration and Feature Contrast for Robust Federated Learning on Non-IID Data," ***IEEE Transactions on Network Science and Engineering (IEEE TNSE)***, JCR Q1, 2025.

4. **Yu Qiao**, A. Adhikary, k. Kim, E.-N. Huh, Z. Han, and C. S. Hong, "Federated hybrid training and self-adversarial distillation: Towards robust edge networks," ***IEEE Transactions on Network Science and Engineering (IEEE TNSE)***, JCR Q1, 2025.

5. **Yu Qiao**, P.-N. Tran, J. S. Yoon, L. X. Nguyen, E.-N. Huh, D. Niyato, and C. S. Hong, "DeepSeek-Inspired Exploration of RL-based LLMs and Synergy with Wireless Networks: A Survey," ***ACM Computing Survey (CSUR)***, JCR Q1, 2025.

6. **Yu Qiao**, Z. Jin, A. D. Raha, A. Adhikary, E.-N. Huh, D. Niyato, Z. Han, and C. S. Hong, "Robust Federated Learning with Heterogeneous Clients via Classifier Calibration and Alignment," submitted to *IEEE Internet of Things Journal (IEEE IoTJ)*, JCR Q1, 2025.

## Conference Papers as First Author:

1. **Yu Qiao**, M. S. Munir, A. Adhikary, A. D. Raha, and C. S. Hong, "CDFed: Contribution-based Dynamic Federated Learning for Managing System and Statistical Heterogeneity," **IEEE/IFIP Network Operations and Management Symposium (IEEE NOMS)**, 2023.

2. **Yu Qiao**, C. Zhang, H. Q. Le, A. D. Raha, A. Adhikary and C. S. Hong, "Knowledge Distillation in Federated Learning: Where and How to Distill?," **IEEE Asia-Pacific Network Operations and Management Symposium (IEEE APNOMS)**, 2023.

3. **Yu Qiao**, M. S. Munir, A. Adhikary, A. D. Raha, S. H. Hong, and C. S. Hong, "A Framework for Multi-Prototype Based Federated Learning: Towards the Edge Intelligence," **IEEE International Conference on Information Networking (IEEE ICOIN)**, 2023.

4. **Yu Qiao**, A. Adhikary, K. T. Kim, C. Zhang and C. S. Hong, "Knowledge Distillation Assisted Robust Federated Learning: Towards Edge Intelligence,", **IEEE International Conference on Communications (IEEE ICC)**, 2024 (IEEE Communications Society's flagship conference).

5. **Yu Qiao**, A. Adhikary, C. Zhang and C. S. Hong, "Towards Robust Federated Learning via Logits Calibration on Non-IID Data," **IEEE Network Operations and Management Symposium (IEEE NOMS)**, 2024.

6. **Yu Qiao**, P.-N. Tran and C. S. Hong, "A Distribution-Aware Robust Federated Learning Framework for Mobile Edge Networks," **IEEE International Conference on Information Networking (IEEE ICOIN)**, 2025.

7. **Yu Qiao**, H. Kim, Y. M. Park, E.-N. Huh, and C. S. Hong, "Mitigating Label Skewness in Robust Federated Learning via Feature Synthesis," **IEEE Asia-Pacific Network Operations and Management Symposium (IEEE APNOMS)**, 2025.

## Other Journal Papers as Co-Author:

1. A. Adhikary, A. D. Raha, **Yu Qiao**, Walid Saad, Z. Han and C. S. Hong, "Holographic MIMO With Integrated Sensing and Communication for Energy-Efficient Cell-Free 6G Networks," **IEEE Internet of Things Journal**, 2024.

2. A. Adhikary, M. S. Munir, A. D. Raha, **Yu Qiao**, Z. Han and C. S. Hong, "Integrated Sensing, Localization, and Communication in Holographic MIMO-Enabled Wireless Network: A Deep Learning Approach," in **IEEE Transactions on Network and Service Management**, 2024.

3. H. Q. Le, Minh N. H. Nguyen, Chu Myaet Thwal, **Yu Qiao**, C. Zhang, and C. S. Hong, "Fedmekt: Distillation-based embedding knowledge transfer for multimodal federated learning," **Neural Networks**, 2024.

4. H. Q. Le, Chu Myaet Thwal, **Yu Qiao**, Ye Lin Tun, Minh N. H. Nguyen, E.-N. Huh, and C. S. Hong, "Cross-modal prototype based multimodal federated learning under severely missing modality," **Information Fusion**, 2025.

5. Z. Jin, **Yu Qiao**, "A novel node selection scheme for energy-efficient cooperative spectrum sensing using D–S theory," **Wireless Networks**, 2020.

6. A. Adhikary, **Yu Qiao**, A. D. Raha, Luyao Zou, Mrityunjoy Gain, Z. Han, and C. S. Hong, " An Age of Service and Transformer-Driven Transfer Learning Framework for Holographic MIMO-Enabled 6G Networks," **IEEE Transactions on Network Science and Engineering**, 2025.

7. A. D. Raha, k. Kim, A. Adhikary, Mrityunjoy Gain, **Yu Qiao**, Z. Han, C. S. Hong, "Boosting federated domain generalization: Understanding the role of advanced pre-trained architectures" **IEEE Internet of Things Journal**, 2025.

## Other Conference Papers as Co-Author:

1. H. Q. Le, **Yu Qiao**, L. X. Nguyen, Luyao Zou, and C. S. Hong, "Federated multimodal learning for iot applications: A contrastive learning approach," in **Asia-Pacific Network Operations and Management Symposium (APNOMS)**, 2023.

2. A. Adhikary, A. D. Raha, **Yu Qiao**, Yu Min Park, Z. Han and C. S. Hong, "A Power Allocation Framework for Holographic MIMO-Aided Energy-Efficient Cell-Free Networks," **IEEE International Conference on Communications**, Denver, CO, 2024 (IEEE Communications Society's flagship conference).

3. A. Adhikary, A. D. Raha, **Yu Qiao**, Seok Won Kang, C. S. Hong, "Transfer Learning Empowered Power Allocation in Holographic MIMO-enabled Wireless Network," **IEEE Network Operations and Management Symposium**, Seoul, Korea, Republic of, 2024.

4. A. Adhikary, A. D. Raha, **Yu Qiao**, G. F. Ejigu, Sun Moo Kang, E.-N. Huh, and C. S. Hong, "Intelligent Omni Surface-Assisted Cell-Free Massive MIMO System for 6G Wireless Network," **International Conference on Advanced Technologies for Communications (ATC)**, Da Nang, Vietnam, 2023 (Best Paper Award).

5. A. Adhikary, A. D. Raha, **Yu Qiao**, M. S. Munir, Ki tae Kim, C. S. Hong, "Transformer-based Communication Resource Allocation for Holographic Beamforming: A Distributed Artificial Intelligence Framework," **Asia-Pacific Network Operations and Management Symposium (APNOMS)**, Sejong, Korea, Republic of, 2023.

6. A. Adhikary, M. S. Munir, A. D. Raha, **Yu Qiao** and C. S. Hong, "Artificial Intelligence Framework for Target Oriented Integrated Sensing and Communication in Holographic MIMO," **IEEE/IFIP Network Operations and Management Symposium**, Miami, FL, 2023.

7. A. Adhikary, M. S. Munir, A. D. Raha, **Yu Qiao**, S. H. Hong, E. N. Huh, and C. S. Hong, "An Artificial Intelligence Framework for Holographic Beamforming: Coexistence of Holographic MIMO and Intelligent Omni-Surface," **International Conference on Information Networking (ICOIN)**, Bangkok, Thailand, 2023.

8. A. D. Raha, A. Adhikary, M. S. Munir, **Yu Qiao** and C. S. Hong, "Segment Anything Model Aided Beam Prediction for the Millimeter Wave Communication," **Asia-Pacific Network Operations and Management Symposium (APNOMS)**, Sejong, Korea, Republic of, 2023.

9. A. D. Raha, M. S. Munir, A. Adhikary, **Yu Qiao**, S. B. Park and C. S. Hong, "An Artificial Intelligent-Driven Semantic Communication Framework for Connected Autonomous Vehicular Network," **International Conference on Information Networking (ICOIN)**, Bangkok, Thailand, 2023.