

SHEN LEMING

CONTACT INFORMATION

Affiliation: The Hong Kong Polytechnic University E-mail: leming.shen@connect.polyu.hk

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Research Interest: **LLMs & Embodied AI, Mobile/Edge Computing, AIoT Applications**

Address: QT 404, Chow Yei Ching Building, The Hong Kong Polytechnic University, Hong Kong SAR, China.

EDUCATION

University College London, London, United Kingdom (QS 2026: 9) *2026.02 - 2026.07*

Supervisor: Prof. Chris Xiaoxuan Lu

Visiting PhD in Robotics and Multimodal AI, Department of Computer Science

The Hong Kong Polytechnic University, Hong Kong, China (QS 2026: 54) *2022.08 - present*

Supervisor: Prof. Yuanqing Zheng

PhD in Networking and Mobile Computing, Department of Computing

Zhejiang University, Hangzhou, China (QS 2026: 49) *2018.08 - 2022.06*

Supervisor: Prof. Jinsong Han

Bachelor's Degree, Software Engineering, College of Computer Science and Technology

PUBLICATIONS

Conferences

1. [MobiCom'25] **Leming Shen**, Qiang Yang, Yuanqing Zheng, and Mo Li. *AutoIOT: LLM-Driven Automated Natural Language Programming for AIoT Applications*. In The 31st Annual International Conference on Mobile Computing and Networking, MobiCom, Nov. 4-8, 2025, Hong Kong, China.
Artifacts — Available  | Functional  | Reusable  | Replicated 
Project — <https://lemingshen.github.io/projects/autoiot/>
2. [SenSys'25] **Leming Shen**, Qiang Yang, Xinyu Huang, Zijing Ma, and Yuanqing Zheng. *GPIoT: Tailoring Small Language Models for IoT Program Synthesis and Development*. In The 23rd ACM Conference on Embedded Networked Sensor Systems, SenSys, May 6-9, 2025, Irvine, USA.
Project — <https://lemingshen.github.io/projects/gpiot/>
3. [MobiSys'24] **Leming Shen**, Qiang Yang, Kaiyan Cui, Yuanqing Zheng, Xiaoyong Wei, Jianwei Liu, and Jinsong Han. *FedConv: A Learning-on-Model Paradigm for Heterogeneous Federated Clients*. In Proceedings of the ACM International Conference on Mobile Systems, Applications, and Services, MobiSys, June 3-7, Tokyo, Japan.
Artifacts — Available  | Functional  | Reusable 
Project — <https://lemingshen.github.io/projects/fedconv/>
4. [INFOCOM'24] Kaiyan Cui, **Leming Shen**, Yuanqing Zheng, Fu Xiao, Jinsong Han. *Talk2Radar: Talking to mmWave Radars via Smartphone Speaker*. In Proceedings of the IEEE International Conference on Computer Communications, INFOCOM, May 20–23, 2024, Vancouver, Canada.
5. [SenSys'22] Ming Gao, Lingfeng Zhang, **Leming Shen**, Xiang Zou, Jinsong Han, Feng Lin, and Kui Ren. *KITE: Exploring the practical threat from acoustic transduction attacks on inertial sensors*. In Proceedings of the 20th ACM Conference on Embedded Networked Sensor Systems, SenSys, page 696–709, New York, NY, USA, 2023. Association for Computing Machinery.

6. [ICDCS'21] Jianwei Liu, Wenfan Song, **Leming Shen**, Jinsong Han, Xian Xu, Kui Ren, *MandiPass: Secure and Usable User Authentication via Earphone IMU*. 41st IEEE International Conference on Distributed Computing Systems, ICDCS, July 7-10, Washington DC, USA.

Journals

1. [TMC] **Leming Shen**, Qiang Yang, Kaiyan Cui, Yuanqing Zheng, Xiao-Yong Wei, Jianwei Liu, Jinsong Han, *Hierarchical and Heterogeneous Federated Learning via a Learning-on-Model Paradigm*. IEEE Transactions on Mobile Computing (2025).
2. [TMC] Xinyu Huang, **Leming Shen**, Zijing Ma, Yuanqing Zheng, *Towards Privacy-Preserving and Personalized Smart Homes via Tailored Small Language Models*.
3. [TMC] Kaiyan Cui, Qiang Yang, **Leming Shen**, Yuanqing Zheng, Fu Xiao, Jinsong Han, *Towards ISAC-Empowered mmWave Radars by Capturing Modulated Vibrations*. IEEE Transactions on Mobile Computing (2024).
4. [TMC] Ming Gao, Lingfeng Zhang, **Leming Shen**, Xiang Zou, Jinsong Han, Feng Lin, Kui Ren, *Exploring Practical Acoustic Transduction Attacks on Inertial Sensors in MDOF Systems*. IEEE Transactions on Mobile Computing (2023).
5. [TMC] Jianwei Liu, Wenfan Song, **Leming Shen**, Jinsong Han, Kui Ren, *Secure User Verification and Continuous Authentication via Earphone IMU*. IEEE Transactions on Mobile Computing (2023)

Short Papers

1. [INFOCOM'26 EIN Workshop] **Leming Shen** and Yuanqing Zheng. *Federated Self-Evolving Embodied AI Agents*. In Proceedings of the IEEE International Conference on Computer Communications (INFOCOM) Workshop, Embodied Intelligence Networks (EIN), May 18–21, 2026, Tokyo, Japan.
2. [MobiCom'25] Xinyu Huang, **Leming Shen**, Zijing Ma, and Yuanqing Zheng. *Poster: Towards Privacy-Preserving and Personalized Smart Homes via Tailored Small Language Models*. In The 31st Annual International Conference on Mobile Computing and Networking (ACM MOBICOM '25), November 4–8, 2025, Hong Kong, China.
3. [CCS'25] Zijing Ma, **Leming Shen**, Xinyu Huang, and Yuanqing Zheng. *Poster: LLMalware: An LLM-Powered Robust and Efficient Android Malware Detection Framework*. In Proceedings of the 2025 ACM SIGSAC Conference on Computer and Communications Security (CCS '25), October 13–17, 2025, Taipei, Taiwan.
4. [MobiSys'25] **Leming Shen** and Yuanqing Zheng. *Poster: Towards Federated Embodied AI with FEAI*. In The 30th Annual International Conference on Mobile Computing and Networking (ACM MobiCom '24), September 30–October 4, 2024, Washington D.C., DC, USA.
5. [MobiCom'24] **Leming Shen**, and Yuanqing Zheng. *IoTCoder: A Copilot for IoT Application Development*. In Proceedings of the 30th Annual International Conference on Mobile Computing and Networking, MobiCom '24, Washington, D.C., USA.
6. [ICDCS'23] **Leming Shen**, Yuanqing Zheng, *PhD Symposium: FedDM: Data and Model Heterogeneity-Aware Federated Learning via Dynamic Weight Sharing*. 43rd IEEE International Conference on Distributed Computing Systems, ICDCS 2023, Hong Kong, China, July 18–21, 2023.
7. [SenSys'22] Kaiyan Cui, Qiang Yang, **Leming Shen**, Yuanqing Zheng, and Jinsong Han. *Poster Abstract: Integrated sensing and communication between daily devices and mmwave radars*. In Proceedings of the 20th ACM Conference on Embedded Networked Sensor Systems, SenSys '22, page 831–832, New York, NY, USA, 2023. Association for Computing Machinery.

TPC Member

- ACM MobiSys Workshop – AutoSys, 2026.
- ACM MobiSys Workshop – HeadSys, 2026.
- ACM MobiCom Demos, 2025.
- ACM MobiCom Artifact Evaluation, 2025.
- ACM MobiSys Artifact Evaluation, 2024, 2025.
- ACM SenSys Artifact Evaluation, 2024.
- NDSS Artifact Evaluation, 2026.
- ACM CCS Artifact Evaluation, 2025.
- IEEE S&P Artifact Evaluation, 2026.
- USENIX Security Artifact Evaluation, 2026.

Invited Reviewer

- ACM Transactions on Internet of Things (TIOT) 2025.
- Computer Networks, 2025.
- IEEE Transactions on Mobile Computing (TMC) 2024.
- ACM Transactions on Sensor Networks (ToSN) 2024.
- IEEE Transactions on Wireless Communications (TWC) 2023, 2024.
- ACM IMWUT/UbiComp 2023, 2024, 2025.
- Expert Systems with Applications (ESWA), 2025, 2026
- Sensing and Bio-Sensing Research, 2025.
- Computers and Electrical Engineering, 2025.
- Computers and Electronics in Agriculture, 2026.

Others

- Microsoft Learn Student Ambassadors, 2022.
- Microsoft Student Partners, 2020, 2021.

HONORS & AWARDS

1. ACM CCS **Distinguished Artifact Evaluation Reviewer Award**, 2025.
2. ACM SenSys **Distinguished Artifact Evaluation Reviewer Award**, 2024.
3. ACM MobiSys **Distinguished Artifact Evaluation Reviewer Award**, 2024.
4. ACM MobiSys Student Travel Grant, 2024
5. **Outstanding Graduates of Zhejiang University**, awarded on Undergraduate period, 2022.
6. **Excellent Undergraduate Graduation Thesis of Zhejiang University, Research and Implementation of Meta-learning-based Wi-Fi Activity Recognition System**, 2022

TEACHING

- Teaching Assistant, COMP5434 Big Data Computing, 2024 Fall, 2025 Fall.
- Teaching Assistant, COMP5311 Internet Infrastructure and Protocols, 2022 Fall, 2023 Fall.
- Teaching Assistant, COMP1011 Programming Fundamentals, 2023 Spring, 2024 Spring, 2025 Spring.

SKILLS

- **Languages:** English, Mandarin
- **Programming:** Python, C++, C, C#, Java, MATLAB, Go, SQL, JavaScript, HTML, CSS, Pascal, LaTex, Markdown, RST, JSON, XML
- **Platforms & Frameworks:** LangChain, Flower, Django, OpenAI, Vue, React, Flask

SOFTWARE PROJECT EXPERIENCE

- A LISP-like made-up programming language interpreter. (in Java)
- A MIPS assembly language interpreter. (in C#)
- A micro epidemic management web application. (in Python & Vue.js)
- A book injury system based on web spider. (in Java)
- A college teaching assistance web platform. (in Python & Bootstrap)
- An IoT device management and monitoring web platform. (in Python & React.js)
- A general merchandise vertical search engine. (in Java, Python & Vue.js)
- A distributed mini database system. (in C, C++, Java)