# Kenuo **Xu**

Senior Engineer · Huawei

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## Employment

**Huawei** — *Nanjing, China*

Senior Engineer — *Aug. 2025 - Now*

- In the WLAN lab of Datacom PL.
- Working on indoor wireless technologies.

**Microsoft Research Asia** — *Shanghai, China*

Research Intern — *Dec. 2022 - Sep. 2023*

- In the Shanghai Wireless Group; mentor: Prof. Lili Qiu
- Worked on large language models plus computer networking.

## Education

**Peking University** — *Beijing, China*

Ph.D. in Computer Science — *Sep. 2020 - Jun. 2025*

- In the Software-hardware Orchestrated ARchitecture (SOAR) group; advisor: Prof. Chenren Xu
- Research interest: mobile computing, wireless networking, and their applications in IoT, robotics, and human-computer interaction.
- Designed a visible light backscatter communication system that supports concurrent transmission for low latency purpose.
- Designed a visible light communication system with spike cameras as receivers to achieve high data rate and dynamic range.
- Designed a liquid-crystal fiducial marker system using LiDAR as receivers for extended reading range and higher ranging accuracy.
- See publications for more research.

**Peking University** — *Beijing, China*

B.Sc. in Computer Science — *Sep. 2016 - Jun. 2020*

- Graduated with Excellent Graduate Award

## Publications

**RetroLiDAR: A Liquid-crystal Fiducial Marker System for High-fidelity Perception of Embodied AI** — *ACM SenSys*

**Kenuo Xu**, Bo Liang, Jingyu Li, Chenren Xu — *2025*

- A long-range high-ranging-accuracy fiducial marker system using LiDAR and liquid crystals for robotics and virtual reality.

**RetroV2X: A New V2X Paradigm with Visible Light Backscatter Networking** — *Fundamental Research*

Chenren Xu, **Kenuo Xu**, Lilei Feng, Bo Liang — *2023*

- A practical vehicle-to-everything communication system with visible light.

**When Visible Light (Backscatter) Communication Meets Neuromorphic Cameras in V2X** — *ACM HotMobile*

**Kenuo Xu**, Kexing Zhou, Chengxuan Zhu, Shanghang Zhang, Boxin Shi, Xiaoqiang Li, Tiejun Huang, Chenren Xu — *2023*

- When VLC meets neuromorphic cameras: a spike cameras as VLC receiver achieves 4.8 kbps data rate and different mobile scenarios.

**Low-Latency Visible Light Backscatter Networking with RetroMUMIMO** — *ACM SenSys*

**Kenuo Xu**, Chen Gong, Bo Liang, Yue Wu, Boya Di, Lingyang Song, Chenren Xu — *2022*

- Enables 8 concurrent VLBC links and reduces networking latency by 92.0%.

**EchoSight: Streamlining Bidirectional Virtual-physical Interaction with In-situ Optical Tethering** — *ACM CHI*

Jingyu Li, Qingwen Yang, **Kenuo Xu**, Yang Zhang, Chenren Xu — *2025*

- An optical look-and-control user interaction system for AR glasses.

**High-Speed Passive Visible Light Communication with Event Cameras and Digital Micro-Mirror** — *ACM SenSys*

Yanxiang Wang, Yiran Shen, **Kenuo Xu**, Mahbub Hassan, Guangrong Zhao, Chenren Xu, Wen Hu — *2024*

- 16x throughput improvement for passive VLC using event camera and digital micro-mirror device.

**Designing Network Algorithms via Large Language Models** — *ACM HotNets*, *2024*

Zhiyuan He, Aashish Gottipati, Lili Qiu, Xufang Luo, **Kenuo Xu**, Yuqing Yang, Fanscis Y. Yan

- Using LLMs to design algorithms tailored for computer networks.

**VLID: Visible Light Backscatter System for Battery-free Internet-of-Things** — *IEEE/ACM Transactions on Networking*, *Accepted*

Chenren Xu, Purui Wang, Tuochao Chen, Yue Wu, **Kenuo Xu**, Xieyang Xu, Yang Shen, Junrui Yang, Guojun Chen, Guobin Shen

- An end-to-end VLBC solution for battery-free IoT networking.

**Renovating road signs for infrastructure-to-vehicle networking: a visible light backscatter communication and networking approach** — *ACM MobiCom*, *2020*

Purui Wang, Lilei Feng, Guojun Chen, Chenren Xu, Yue Wu, **Kenuo Xu**, Guobin Shen, Kuntai Du, Gang Huang, Xuanzhe Liu

- Enhance the reliability of autonomous driving with reflective roadsigns that conveys dynamic additional information.

**Turboboosting Visible Light Backscatter Communication** — *ACM SIGCOMM*, *2020*

Yue Wu, Purui Wang, **Kenuo Xu**, Lilei Feng, Chenren Xu

- Improve the data rate of VLBC by 8x (prototype) and 32x (simulation) with advanced modulation schemes.

## Honors & Awards

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|---|---|---|
| 2024 | **Youth Award for Athletics**, Peking University | *Beijing, China* |
| 2024 | **Second Prize**, Ubiquitous Intelligent Sensing Technology Innovation and Application Competition | *Hangzhou, China* |
| 2022 | **Merit Student**, Peking University | *Beijing, China* |
| 2021 | **First Prize**, Competition of Future Network Technology Innovation | *Nanjing, China* |
| 2020 | **Excellent Graduate**, Peking University | *Beijing, China* |
| 2019 | **Houston BAA Scholarship**, Peking University | *Beijing, China* |
| 2019 | **Merit Student**, Peking University | *Beijing, China* |

## Activities

**Teaching Assistant** — *Peking University*

Computer Networks (Honor Track) — *Fall 2019, 2020, 2021-2024(Light)*

- Organizing the course and answering questions.
- Giving assignments, tutorials, and grading of labs.
- Designing quizzes and grading students' responses.
- Mentoring course research projects (light).

**Journal Reviewer**

Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT) — *2021*