Kenuo **Xu**

Ph.D. Student · Peking University

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Education

Peking University — *Beijing, China*

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

- In the Software-hardware Orchestrated ARchitecture (SOAR) group; advisor: Prof. Chenren Xu
- Design a visible light backscatter communication system that supports concurrent transmission for low latency purpose.
- Design a visible light communication system with spike cameras as receivers to achieve high data rate and dynamic range.
- Design 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

Employment

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.

Publications

RetroLiDAR: A Liquid-crystal Fiducial Marker System for High-fidelity Spatial Computing — *In Submission*

Kenuo Xu, Bo Liang, Jingyu Li, Chenren Xu — *2024*

- 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%.

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.

LLM-ABR: Designing Adaptive Bitrate Algorithms via Large Language Models — *In Submission*

Zhiyuan He, Aashish Gottipati, Lili Qiu, Fanscis Y. Yan, Xufang Luo, **Kenuo Xu**, Yuqing Yang — *2023*

- 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*

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

- 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*

Purui Wang, Lilei Feng, Guojun Chen, Chenren Xu, Yue Wu, **Kenuo Xu**, Guobin Shen, Kuntai Du, Gang Huang, Xuanzhe Liu *2020*

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

Turboboosting Visible Light Backscatter Communication *ACM SIGCOMM*

Yue Wu, Purui Wang, **Kenuo Xu**, Lilei Feng, Chenren Xu *2020*

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

Honors & Awards

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, 2021-2023(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*