Department of Computer Science
香港城市大學
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COMPUTER SCIENCE COLLOQUIUM

Towards a Reliable Cerebellum System for Low-Altitude Embodied Agents

SPEAKER **Prof. Jingao Xu**

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TIME 10:30 AM - 11:30 AM
VENUE G7315, 7th Floor Green Zone, Yeung Kin Man Academic Building, City University of Hong Kong, 83 Tat Chee Avenue, Kowloon Tong

ABSTRACT

Low-altitude embodied agents, such as drones, are increasingly expected to operate autonomously in complex real-world environments. Yet reliable low-level autonomy remains a major bottleneck, especially under GPS-denied conditions, aggressive motion, and dynamic obstacles. This talk presents our recent efforts toward building a reliable "cerebellum system" for embodied agents through robust GPS-denied localization and fast obstacle avoidance. We explore how edge-assisted perception, visual SLAM, and event-driven sensing can provide stable, low-latency sensorimotor capabilities for lightweight aerial platforms. Beyond these systems, the talk will further discuss our recent thinking on whether a reliable "cerebellum" can also serve as a critical foundation for future embodied AI "cerebrum" systems, enabling more robust, efficient, and scalable embodied intelligence.

BIOGRAPHY

Jingao Xu is an Assistant Professor in the Department of Electrical and Computer Engineering at the University of Hong Kong. Prior to joining HKU, he was a postdoc at CMU and received his PhD at Tsinghua University. His research lies at the intersection of embodied AI, embedded AI, edge computing, and autonomous systems. Currently, he focuses on building reliable and scalable intelligence for low-altitude embodied agents like drones.

All are welcome!

In case of questions, please contact Prof. LI Zhenjiang at zhenjiang.li@cityu.edu.hk, or visit the CS Departmental Seminar Web at https://www.cs.cityu.edu.hk/events/cs-seminars/recent-cs-colloquiums.