

# Jingao Xu | Ph.D. Candidate

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## Research Interests

📱 Mobile Computing    ☁ Internet of Things    📶 Wireless Localization    📷 Visual SLAM

## Education

- Aug. 2017 – Present    📖 **Tsinghua University**, School of Software.  
Ph.D. in Software Engineering (expected 2022)  
Thesis(TBD): *Multi-modal Localization Systems in AIoT: Design and Implementation*.  
Supervisor: Prof. Yunhao Liu & Prof. Zheng Yang
- Aug. 2013 – July 2017    📖 **Tsinghua University**, School of Software.  
B.E. in Software Engineering with **Excellent Thesis & Graduation Award**  
Thesis: *Wireless Indoor Localization via Multi-modal Fusion*.  
Supervisor: Prof. Yunhao Liu & Prof. Zheng Yang

## Academic & Industry Experience

- Oct. 2016 – Feb. 2017    📖 **Microsoft Research Asia**, Cloud & Mobile Group.  
Research Intern  
Mentor: Dr. Yuanchao Shu

## Research Publications

### 📄 Conference Papers

- [C1] **Jingao Xu\***, Hao Cao\*, Zheng Yang, Longfei Shangguan, Jialin Zhang, Xiaowu He, Yunhao Liu, "SwarmMap: Scaling Up Real-time Collaborative Visual SLAM at the Edge", 19th USENIX Symposium on Networked Systems Design and Implementation (**USENIX NSDI**), Renton, USA, April 4-6, 2022 (**forthcoming**).
- [C2] **Jingao Xu\***, Guoxuan Chi\*, Zheng Yang, Danyang Li, Qian Zhang, Qiang Ma, Xin Miao, "FollowUpAR: Enabling Follow-up Effects in Mobile Applications", ACM International Conference on Mobile Systems, Applications, and Services (**ACM MobiSys**), 2021, Virtual Online, 24 June-2 July, 2021.
- [C3] Danyang Li\*, **Jingao Xu\***, Zheng Yang, Yumeng Lu, Qian Zhang, Xinglin Zhang, "Train Once, Locate Anytime for Anyone: Adversarial Learning Based Wireless Localization", IEEE Conference on Computer Communications (**IEEE INFOCOM**), Virtual Online, 10-13 May, 2021.
- [C4] Li Zhang, Yi Xu, Jinhui Bao, Qiuyu Wang, **Jingao Xu**, Danyang Li, Yaodong Yang, Min Zhang, "Multi-Region Indoor Localization Based on The WVP System", IEEE International Conference on Parallel and Distributed Systems (**IEEE ICPADS**), Beijing, China, 12-14 December, 2021.
- [C5] Erqun Dong, Jianzhe Liang, Zeyu Wang, **Jingao Xu**, Longfei Shangguan, Qiang Ma, Zheng Yang, "Improving the Applicability of Visual Peer-to-Peer Navigation with Crowdsourcing", IEEE International Conference on Parallel and Distributed Systems (**IEEE ICPADS**), Hong Kong, China (Virtual Online), 2-4 December, 2020.

\* indicates co-primary authors, † indicates corresponding author.

- [C6] **Jingao Xu**, Hao Cao, Danyang Li, Kehong Huang, Chen Qian, Longfei Shangguan, Zheng Yang, "Edge Assisted Mobile Semantic Visual SLAM", IEEE Conference on Computer Communications (**IEEE INFOCOM**), Beijing, China (Virtual Online), 5-8 July, 2020 (**Best-in-session Presentation Award**).
- [C7] Liang Dong, **Jingao Xu**, Guoxuan Chi, Danyang Li, Xinglin Zhang, Jianbo Li, Qiang Ma, Zheng Yang, "Enabling Surveillance Cameras to Navigate", International Conference on Computer Communications and Networks (**IEEE ICCCN**), Singapore (Virtual Online), 3-6 August, 2020.
- [C8] Erqun Dong\*, **Jingao Xu\***, Chenshu Wu, Yunhao Liu, Zheng Yang, "Pair-Navi: Peer-to-Peer Indoor Navigation with Mobile Visual SLAM", IEEE Conference on Computer Communications (**IEEE INFOCOM**), Paris, France, 29 April-2 May, 2019 (**Best-in-session Presentation Award**).
- [C9] **Jingao Xu**, Zheng Yang, Hengjie Chen, Yunhao Liu, Xiancun Zhou, Jianbo Li, Nicholas Lane, "Embracing Spatial Awareness For Reliable WiFi-based Indoor Location Systems", IEEE International Conference on Mobile Ad-hoc and Sensor Systems (**IEEE MASS**), Chengdu, China, Oct 8 - Oct 11, 2018.
- [C10] Hengjie Chen, **Jingao Xu**<sup>†</sup>, Erqun Dong, Zheng Yang, "Push the Limit of Multi-module Localization with Enhanced Particle Filter", China Conference on Internet of Things (**CWSN**), Dunhuang, China, Sep 18 - Sep 21, 2020.

## Journal Articles

- [J1] Guoxuan Chi, **Jingao Xu**, Jialin Zhang, Qian Zhang, Qiang Ma, Zheng Yang, "Locate, Tell, and Guide: Enabling Public Cameras to Navigate the Public", IEEE Transactions on Mobile Computing (**IEEE TMC**), 2021.
- [J2] Danyang Li, **Jingao Xu**, Zheng Yang, Chenshu Wu, Jianbo Li, Nicholas D.Lane, "Wireless Localization with Spatial-Temporal Robust Fingerprints", ACM Transactions on Sensor Networks (**ACM TOSN**), 2021.
- [J3] **Jingao Xu**, Erqun Dong, Qiang Ma, Chenshu Wu, Zheng Yang, "Smartphone-based Indoor Visual Navigation with Leader-Follower Mode", ACM/IEEE Transactions on Sensor Network (**ACM TOSN**), 2021.
- [J4] Liang Dong, **Jingao Xu**, Guoxuan Chi, Danyang Li, Xinglin Zhang, Jianbo Li, Qiang Ma, Zheng Yang, "Enabling Surveillance Cameras to Navigate", ACM/IEEE Transactions on Sensor Network (**ACM TOSN**), 2021.
- [J5] **Jingao Xu**, Hengjie Chen, Kun Qian, Erqun Dong, Min Sun, Chenshu Wu, Li Zhang, Zheng Yang, "iVR: Integrated Vision and Radio Localization with Zero Human Effort", Proceedings of ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (**ACM IMWUT/UbiComp**), London, UK, Sep 11 - Sep 13, 2019.
- [J6] Chenshu Wu, **Jingao Xu**, Zheng Yang, Nicholas D. Lane, Zuwei Yin, "Gain Without Pain: Accurate WiFi-based Localization with Fingerprint Spatial Gradient", Proceedings of ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (**ACM IMWUT/UbiComp**), 2017, Maui, USA, Sep 11 - Sep 15, 2017.

## Honors & Awards

- 2021, 2016  **National Scholarship**, Tsinghua University
- 2019, 2020  **Best-in-session Presentation Award**, IEEE INFOCOM
- 2017  **Excellent Bachelor Thesis & Excellent Graduate** of Tsinghua University  
**Excellent Graduate** of Beijing
- 2016  **First-class Science and Technology Innovation Scholarship**, Tsinghua University
- 2014 – 2019  **First-class Overall Excellence Scholarship**, Tsinghua University.

## Professional Experience

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### Reviewer

- 📌 ACM IMWUT/UbiComp 2019-present
- 📌 IEEE IOTJ 2020-present
- 📌 ACM TOSN 2020-present
- 📌 IEEE ACCESS 2021-present
- 📌 IEEE TMC 2020
- 📌 TURC 2019, 2020
- 📌 Sensors 2020

### Teaching

- 📌 **Teaching Assist:** The Frontiers of Computer Networking (Graduate Course)  
Spring 2020, Spring 2021, Tsinghua University
- 📌 **Teaching Assist:** Software Engineering (Undergraduate Course)  
Fall 2016, kernel course for undergraduates in School of Software, Tsinghua University
- 📌 **Counsellor of 85 undergraduates of class 2017** in School of Software, Tsinghua University  
Our class won 10+ collective Awards including **Tsinghua Advanced Class Collective & Beijing Advanced Class Collective**.  
I was honored by Tsinghua **Lin-Feng Counsellor Award** (the Toppest award for counsellors) and **129 Counsellor Award** (Top awards for counsellors in Tsinghua University).