



# Shengkai Zhang

*Curriculum Vitae*

## PERSONAL DETAILS

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<i>Title</i>	Associate Professor
<i>Hobby</i>	Gym, Hiking
<i>Email</i>	shengkai@whut.edu.cn, szhangaj@connect.ust.hk
<i>Web</i>	<a href="http://www.sheng-kai.top/">http://www.sheng-kai.top/</a>

## EDUCATION

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<b>Ph.D. in Information Engineering</b> <i>Huazhong University of Science and Technology (HUST)</i> School of Electronic Information and Communications. Advisor: <b>Prof. Tao Jiang.</b>	09/2017 - 06/2021
<b>M.Phil. in Computer Science and Engineering</b> <i>Hong Kong University of Science and Technology (HKUST)</i> Department of Computer Science and Engineering. Advisor: <b>Prof. Bo Li.</b>	09/2012 - 11/2014
<b>M.Sc. in Communication and Information System</b> <i>Huazhong University of Science and Technology (HUST)</i> School of Electronic Information and Communications. Advisor: <b>Prof. Hongbo Jiang.</b>	09/2009 - 03/2012
<b>B.Eng. in Communication Engineering</b> <i>Central China Normal University (CCNU)</i>	09/2005 - 06/2009

## RESEARCH INTERESTS

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Aerial Robotics, Wireless Sensing, Gaussian Splatting, SLAM, Mobile Computing

## RESEARCH AND INDUSTRY EXPERIENCE

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<b>Associate Professor</b> <i>Wuhan University of Technology, China</i>	07/2022 - Present
<b>Assistant Professor</b> <i>Wuhan University of Technology, China</i>	06/2021 - 06/2022
<b>Research Assistant</b> <i>HKUST-DJI Joint Innovation Laboratory, Hong Kong</i>	12/2014 - 08/2016

## PUBLICATIONS

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- [1] Cong Fan, Shengkai Zhang, Kezhong Liu, Shuai Wang, Zheng Yang, and Wei Wang. *Enhancing mmWave Radar Point Cloud via Visual-inertial Supervision*. IEEE International Conference on Robotics and Automation (ICRA), 2024.
- [2] Danyang Li, Yishujie Zhao, Jintao Xu, Shengkai Zhang, Longfei Shangguan, Zheng Yang. *edgeSLAM2: Rethinking Edge-Assisted Visual SLAM with On-Chip Intelligence*. IEEE International Conference on Computer Communications (INFOCOM), pp. 1-10, 2024.
- [3] Hongzhou Li, Sijie Yu, Shengkai Zhang, and Guang Tan. *Resolving Loop Closure Confusion in Repetitive Environments for Visual SLAM through AI Foundation Models Assistance*. IEEE International Conference on Robotics and Automation (ICRA), 2024.
- [4] Zheng Li, Jun Ma, Feifeng Jiang, Shengkai Zhang. *Assessing the impacts of urban morphological factors on urban building energy modeling based on spatial proximity analysis and explainable machine learning*. Journal of Building Engineering, vol. 85, no. 7, article no. 108675, 2024.
- [5] Dashuai Pei, Danei Gong, Kezhong Liu, Xuming Zeng, Shengkai Zhang, Mozi Chen, Kai Zheng. *mmCTD: Concealed Threat Detection for Cruise Ships Via Mmwave Radar*. IEEE Transactions on Vehicular Technology, DOI: 10.1109/TVT.2024.3352039, Early Access.
- [6] Pengen Gao, Shengkai Zhang, Wei Wang, Chris Xiaoxuan Lu. *Robust Metric Localization in Autonomous Driving via Doppler Compensation with Single-chip Radar*. IEEE Transactions on Intelligent Transportation Systems (TITS), vol. 25, no. 1, pp. 491-502, 2024.
- [7] Danei Gong, Kezhong Liu, Dashuai Pei, Haoran Zhang, Shengkai Zhang, Mozi Chen. *Wi-Watch: Wi-Fi-Based Vigilant-Activity Recognition for Ship Bridge Watch-keeping Officers*. IEEE Transactions on Instrumentation and Measurement, vol. 73, no. 9503717, 2023.
- [8] Kezhong Liu, Dashuai Pei, **Shengkai Zhang**, Mozi Chen, Xuming Zeng, Kai Zheng, and Chunshen Li. *WiCrew: Gait-based Crew Identification for Cruise Ships Using Commodity WiFi*. IEEE Internet of Things Journal, vol. 10, no. 8, pp. 6960-6972, 2022.
- [9] Fei Xiao, **Shengkai Zhang**, Sheyang Tang, Shaojie Shen, Huixin Dong, and Yi Zhong. *WiSion: Bolstering MAV 3D Indoor State Estimation by Embracing Multipath of WiFi*. IEEE Transactions on Vehicular Technology, vol. 72, no. 1, pp. 253-266, 2023.
- [10] **Shengkai Zhang**, Wei Wang, Ning Zhang, Tao Jiang. *LoRa Backscatter Assisted State Estimator for Micro Aerial Vehicles with Online Initialization*. IEEE Transactions on Mobile Computing (TMC), vol. 21, no. 11, pp. 4038-4050, 2022.
- [11] Pengen Gao, **Shengkai Zhang**, Wei Wang, and Chris Xiaoxuan Lu. *DC-Loc: Accurate Automotive Radar Based Metric Localization with Explicit Doppler Compensation*. IEEE International Conference on Robotics and Automation (ICRA), 2022.

- [12] Kezhong Liu, Wen Yang, Mozi Chen, Kai Zheng, Xuming Zeng, **Shengkai Zhang**, and Cong Liu. *Deep Learning based Wireless Human Motion Tracking for Mobile Ship Environments*. IEEE Internet of Things Journal, vol. 9, no. 23, pp. 24186-24198, 2022.
- [13] **Shengkai Zhang**, Sheyang Tang, Wei Wang, Tao Jiang, and Qian Zhang. *Conquering Textureless with RF-referenced Monocular Vision for MAV State Estimation*. IEEE International Conference on Robotics and Automation (ICRA), 2021.
- [14] **Shengkai Zhang**, Wei Wang, Tao Jiang. *WiFi-Inertial Indoor Pose Estimation for Micro Aerial Vehicles*. IEEE Transactions on Industrial Electronics (TIE), vol. 68, no. 5, pp. 4331-4340, 2021.
- [15] **Shengkai Zhang**, Wei Wang, Sheyang Tang, Tao Jiang. *Robot-assisted Backscatter Localization for IoT Applications*. IEEE Transactions on Wireless Communications (TWC), vol. 19, no. 9, pp. 5807-5818, Sep. 2020.
- [16] **Shengkai Zhang**, Wei Wang, Ning Zhang, Tao Jiang. *RF Backscatter-based State Estimation for Micro Aerial Vehicles*. IEEE International Conference on Computer Communications (INFOCOM), 2020.
- [17] **Shengkai Zhang**, Wei Wang, Sheyang Tang, Tao Jiang. *Localizing Backscatters by a Single Robot With Zero Start-up Cost*. IEEE Global Communications Conference (GLOBECOM), 2019.
- [18] **Shengkai Zhang**, Sheyang Tang, Wei Wang, Tao Jiang. *WINS: WiFi-Inertial Indoor State Estimation for MAVs*. ACM Conference on Embedded Networked Sensor Systems (SenSys) (Demo Session), 2018.
- [19] Chen Chen, Wei Wang, **Shengkai Zhang**, and Bo Li. *Cluster Fair Queueing: Speeding up Data-Parallel Jobs with Delay Guarantees*. IEEE International Conference on Computer Communications (INFOCOM), 2017.
- [20] Bing Li, **Shengkai Zhang**, and Shaojie Shen. *CSI-Based WiFi-Inertial State Estimation*. IEEE International Conference on Multisensor Fusion and Integration for Intelligent Systems (MFI), 2016.
- [21] **Shengkai Zhang**, Bo Li, and Baochun Li. *Presto: Towards Fair and Efficient HTTP Adaptive Streaming from Multiple Servers*. IEEE International Conference on Communications (ICC), 2015.
- [22] Jingjie Jiang, **Shengkai Zhang**, Bo Li, and Baochun Li. *Maximized Cellular Traffic Offloading via Device-to-Device Content Sharing*. Device-to-Device Communications in Cellular Networks, IEEE Journal on Selected Areas in Communications (JSAC), vol. 34, no. 1, pp.82-91, 2015.
- [23] **Shengkai Zhang**, Guang Tan, Hongbo Jiang, Bo Li, and Chonggang Wang. *On the Utility of Concave Nodes in Geometric Processing of Large-Scale Sensor Networks*. IEEE Transactions on Wireless Communications (TWC), vol. 13, no. 1, pp.132-143, 2014.
- [24] Hongbo Jiang, **Shengkai Zhang**, Guang Tan, Chonggang Wang. *Connectivity-based Boundary Extraction of Large-Scale 3D Sensor Networks: Algorithm and Applications*. IEEE Transactions on Parallel and Distributed Systems (TPDS), 2014.

- [25] Guang Tan, Hongbo Jiang, **Shengkai Zhang**, Zhimeng Yin, Anne-Marie Kermarrec. *Connectivity-based and Anchor-free Localization in Large-scale 2D/3D Sensor Networks*. ACM Transactions on Sensor Networks (TOSN), vol. 10, no. 1, Article 6 (November 2013), 2013.
- [26] Hongbo Jiang, **Shengkai Zhang**, Guang Tan, Chonggang Wang. *CABET: Connectivity-based boundary extraction of large-scale 3D sensor networks*. IEEE International Conference on Computer Communications (INFOCOM), 2011.
- [27] Guang Tan, Hongbo Jiang, **Shengkai Zhang**, and Anne-Marie Kermarrec. *Connectivity-based and Anchor-Free Localization in Large-Scale 2D/3D Sensor Networks*. ACM International Symposium on Mobile Ad Hoc Networking and Computing (MOBIHOC), 2010.

## HONOURS AND AWARDS

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Excellent Paper Award in Chinese Institute of Electronics	2021
First Class of Huawei Scholarship	2020
National Scholarship for Postgraduates	2020
First Prize of Future Aircraft Competition in HUST	2019
Graduates' Innovation Fund of HUST	2019
HUST Ph.D. Fellowship	2017
Student Travel Grant, ICC, London	2015
HKUST Postgraduate Studentship	2012
HUST Fellowship	2009
Outstanding Undergraduate Student in CCNU	2009
Second-Class Scholarship in CCNU	2009
Third-Class Scholarship in CCNU	2008

## TEACHING EXPERIENCE

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- 2024 Spring: Indoor Localization Technology (WUT / School of Information Engineering)
- 2024 Spring: Digital Electronics (WUT / School of Information Engineering)
- 2022 Fall: Introduction to Information Technology (WUT / School of Information Engineering)
- 2014 Fall: Computer Communication Networks I (HKUST / Department of Computer Science and Engineering)
- 2014 Spring: Operating System (HKUST / Department of Computer Science and Engineering)
- 2013 Fall: Operating System (HKUST / Department of Computer Science and Engineering)