

Chenshu Wu

CONTACT INFORMATION	Department of Electrical & Computer Engineering University of Maryland, College Park 8228 Paint Branch Dr, College Park, MD 20742	Phone: +1 (609) 216 2266 Email: cswu@umd.edu Homepage: http://cswu.me
EDUCATION	Tsinghua University , Department of Computer Science & Technology Ph.D. in Computer Science with Outstanding Doctoral Dissertation & Graduation Award Thesis: <i>Wireless Indoor Localization via Crowdsensing</i> (Supervisor: Prof. Yunhao Liu) Tsinghua University , School of Software B.S. in Computer Software with Excellent Thesis & Graduation Award	Aug. 2010 - July 2015 Aug. 2006 - July 2010
ACADEMIC EXPERIENCE	Department of Electrical & Computer Engineering, University of Maryland, College Park, MD, USA <i>Assistant Research Scientist</i> <i>Postdoc Research Associate (Advisor: Prof. K. J. Ray Liu)</i> Origin Wireless Inc. (A WirelessAI company), MD, USA <i>Principal Scientist</i> Department of Computer Science, Princeton University , Princeton, NJ, USA <i>Postdoc Research Associate (Advisor: Prof. Kyle Jamieson)</i> School of Software, Tsinghua University , Beijing, China <i>Postdoc Researcher (Advisor: Prof. Yunhao Liu)</i> Department of EECS, University of Michigan , Ann Arbor, Michigan USA <i>Research Scholar (Advisor: Prof. Mingyan Liu)</i> Department of Computing, HKPU , Hong Kong, China <i>Research Assistant (Advisor: Prof. Jiannong Cao)</i>	Jan. 2020 - present Sep. 2017 - Dec. 2019 Sep. 2017 - present Apr. 2017 - Sep. 2017 July 2015 - Apr. 2017 July 2014 - Dec. 2014 Aug. 2013 - Jan. 2014
HONORS & AWARDS	Postdoc Research Symposium Winner (3rd place, top in School of Engineering), University of Maryland ACM CHI Best Paper Honorable Mention Award , ACM CHI 2017 2016 Best Paper Award , Tsinghua Science and Technology CCF Outstanding Doctoral Dissertation Award , China Computer Federation (9 awardees in China) The C100 Leadership Scholarship Program Award , The Committee of 100 Outstanding Doctoral Dissertation , Tsinghua University (<i>rank 1st of 109 CS PhD</i>) Academic Rising Star , Tsinghua University (<i>10/20K+ graduate students, featured in Tsinghua Spotlights</i>) Excellent PhD Graduation , Beijing City Excellent PhD Graduation , Tsinghua University Excellent PhD Graduation, Department of Computer Science & Technology, Tsinghua University DengFeng Conference Travel Grant, Tsinghua University Tsinghua Top Grade Scholarship , Tsinghua University (<i>10/20K+ graduate students</i>) Best Paper Candidate , IEEE ICPADS 2014 (<i>4 out of 320+ papers</i>) National Graduate Scholarship	2019 2017 2017 2016 2015 2015 2015 2015 2015 2015 2015 2015 2014 2014 2012, 2013, 2014

Best Poster Award, the 8th International Workshop on IoT and Cloud Computing	2014
Academic Rising Star, Department of Computer Science & Technology, Tsinghua University	2013 & 2014
Boeing Scholarship, Tsinghua University	2014
Tsinghua Lin Feng Counselor Prize , Tsinghua University (<i>highest honor to counselors of undergraduates</i>)	2013
Best Presentation Award, the 344th PhD Forum (CS Section), Tsinghua University	2013
Schlumberger Scholarship, Tsinghua University	2012
ACM/IEEE CPSWeek Outstanding Volunteer Award, ACM/IEEE CPSWeek 2012	2012
Tsinghua Guanghua Scholarship, Tsinghua University	2011
Research in Motion (RIM) Scholarship, Tsinghua University	2011, 2012, 2013
Excellent Student Award, Beijing City	2010
Excellent Undergraduate Thesis Award, Tsinghua University	2010

SELECTED PUBLICATIONS **Highlights:** According to my *Google Scholar Profile*, currently my h-index score is 26 and collectively my work has been cited more than **3600** times by July 2020.

Industrial Impacts: I have been leading the Indoor Tracking project as well as the algorithm efforts for various wireless sensing applications in *Origin Wireless Inc.* Our motion sensing technology has been commercialized by Origin Wireless Inc. and deployed over 150 countries worldwide as Belkin's LinkSys Aware, the first-of-its-kind motion sensing in mesh WiFi for home security. My works on wireless indoor tracking, contactless sleep monitoring, fall detection, etc., are being commercialized by Origin Wireless Inc.

Books

- [B1] **Chenshu Wu**, Zheng Yang, Yunhao Liu, "*Wireless Indoor Localization: A Crowdsourcing Approach*", Springer, 2018.
- [B2] Zheng Yang, **Chenshu Wu**, Yunhao Liu, "*Location-based Computing: Localization and Localizability of Wireless Networks*", Tsinghua University Press, Jan. 2014 (in Chinese, received the **Excellent Academic Monograph (Second Class) of Chinese University Press Book Award**).

Journal Papers

(* indicates students I mentored)

- [J1] **Chenshu Wu**, Feng Zhang, Beibei Wang, and K. J. Ray Liu, "*mSense: Towards Mobile Material Sensing with a Single Millimeter-Wave Radio*", PACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (**ACM IMWUT/UbiComp**), accepted.
- [J2] **Chenshu Wu**, Feng Zhang, Yuqian Hu, and K. J. Ray Liu, "*GaitWay: Monitoring and Recognizing Gait Speed Through the Walls*", IEEE Transactions on Mobile Computing (**IEEE TMC**), to appear.
- [J3] Feng Zhang, **Chenshu Wu**, Beibei Wang, Min Wu, Daniel Bugos, Hangfang Zhang, and K. J. Ray Liu, "*SMARS: Sleep Monitoring via Ambient Radio Signal*", IEEE Transactions on Mobile Computing (**IEEE TMC**), accepted to appear.
- [J4] Fengyu Wang*, Feng Zhang, **Chenshu Wu**, Beibei Wang, and K. J. Ray Liu, "*ViMo: Multi-person Vital Sign Monitoring using Commodity Millimeter Wave Radio*", IEEE Internet of Things Journal (**IEEE IoTJ**), to appear.
- [J5] **Chenshu Wu**, Feng Zhang, Beibei Wang, and K. J. Ray Liu, "*EasiTrack: Decimeter-Level Indoor Tracking with Graph-based Particle Filtering*", IEEE Internet of Things Journal (**IEEE IoTJ**), vol. 7, no. 3, pp. 2397-2411, March 2020.

- [J6] Fengyu Wang*, Feng Zhang, **Chenshu Wu**, Beibei Wang, and K. J. Ray Liu, “*Respiration Tracking for People Counting and Recognition*”, IEEE Internet of Things Journal (**IEEE IoTJ**), vol. 7, no. 6, pp. 5233-5245, June 2020.
- [J7] Kai Zhang*, Yi Zhao, **Chenshu Wu**, Chaofan Yang, Kehong Huang, Chunyi Peng, Yunhao Liu, Zheng Yang, “*ChromaCode: A Fully Imperceptible Screen-Camera Communication System*”, IEEE Transactions on Mobile Computing (**IEEE TMC**), to appear.
- [J8] Feng Zhang, **Chenshu Wu**, Beibei Wang, Hung-Quoc Lai, Yi Han, K. J. Ray Liu, “*WiDetect: Robust Motion Detection with a Statistical Electromagnetic Model*”, PACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (**ACM IMWUT/UbiComp**), London, UK, Sep 11 - Sep 13, 2019.
- [J9] 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*”, PACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (**ACM IMWUT/UbiComp**), London, UK, Sep 11 - Sep 13, 2019.
- [J10] Tongtong Liu, Zheng Yang, Yi Zhao, **Chenshu Wu**, Zimu Zhou, Yunhao Liu, “*Temporal understanding of human mobility: A multi-time scale analysis*”, **PLoS One**, 13(11): e0207697.
- [J11] Junjie Yin*, Zheng Yang, Hao Cao, Tongtong Liu, Zimu Zhou, **Chenshu Wu**, “*A Survey on Bluetooth 5.0 and Mesh: New Milestones of IoT*”, ACM Transactions on Sensor Networks (**ACM TOSN**), 15(3), Article 28, May 2019.
- [J12] Kun Qian*, **Chenshu Wu**, Zheng Yang, Zimu Zhou, Xu Wang, Yunhao Liu, “*Enabling Phased Array Signal Processing for Mobile WiFi Devices*”, IEEE Transactions on Mobile Computing (**IEEE TMC**), vol. 17, no. 8, pp. 1820-1833, Aug. 2018.
- [J13] Kun Qian*, **Chenshu Wu**, Zheng Yang, Yunhao Liu, Fugui He, Tianzhang Xing, “*Enabling Contactless Detection of Moving Humans with Dynamic Speeds Using CSI*”, ACM Transactions on Embedded Computing Systems (**ACM TECS**), vol. 17, no. 2, Jan. 2018.
- [J14] **Chenshu Wu**, Zheng Yang, Chaowei Xiao, “*Automatic Radio Map Adaptation for Indoor Localization using Smartphones*”, IEEE Transactions on Mobile Computing (**IEEE TMC**), vol. 17, no. 3, pp. 517-528, March 2018.
- [J15] **Chenshu Wu**, Jingao Xu, Zheng Yang, Nicholas D. Lane, Zuwei Yin, “*Gain Without Pain: Accurate WiFi-based Localization with Fingerprint Spatial Gradient*”, PACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (**ACM IMWUT/UbiComp**), 2017, Maui, USA, Sep 11 - Sep 15, 2017.
- [J16] Zuwei Yin*, **Chenshu Wu**, Zheng Yang, Yunhao Liu, “*Peer-to-Peer Indoor Navigation using Smartphones*”, IEEE Journal on Selected Areas in Communications (**IEEE JSAC**), vol. 35, no. 5, pp. 1141-1153, May 2017.
- [J17] **Chenshu Wu**, Zheng Yang, Zimu Zhou, Yunhao Liu, Mingyan Liu, “*Mitigating Large Errors in WiFi-based Indoor Localization for Smartphones*”, IEEE Transactions on Vehicular Technology (**IEEE TVT**), vol. 66, no. 7, pp. 6246-6257, July 2017.
- [J18] **Chenshu Wu**, Zheng Yang, Zimu Zhou, Xuefeng Liu, Yunhao Liu, Jianong Cao, “*Non-invasive Detection of Moving and Stationary Human with WiFi*”, IEEE Journal on Selected Areas in Communications (**IEEE JSAC**), vol.33, no.11, pp.2329-2342, Nov. 2015.
- [J19] Zimu Zhou, Zheng Yang, **Chenshu Wu**, Longfei Shangguan, Haibin Cai, Yunhao Liu, Lionel M. Ni, “*WiFi-based Indoor Line-Of-Sight Identification*”, IEEE Transactions on Wireless Communications (**IEEE TWC**), vol. 14, no. 11, pp. 6125-6136, Nov. 2015.
- [J20] Shengnan Li, Zheng Qin, **Chenshu Wu**, Zheng Yang, “*TraIL: Pinpoint Trajectory for Indoor Localization*”, International Journal of Distributed Sensor Networks, vol. 2015, no. 372425, 8 pages, 2015.
- [J21] Wenyuan Liu, Jing Yang, Lin Wang, **Chenshu Wu** and Rongji Zhang, “*Movement Behavior Recognition Based on Statistical Mobility Sensing*”, Ad Hoc & Sensor Wireless Networks, vol. 25, no. 3-4 pp. 323-340, Apr. 2015.
- [J22] Zheng Yang, **Chenshu Wu**, Zimu Zhou, Xinglin Zhang, Xu Wang, Yunhao Liu, “*Mobility Increases Localizability: A Survey on Wireless Indoor Localization using Inertial Sensors*”, **ACM Computing Surveys**, 2015, 47(3):54:154:34.

- [J23] Zimu Zhou, **Chenshu Wu**, Zheng Yang, and Yunhao Liu, “*Sensorless Sensing with WiFi*”, Tsinghua Science and Technology, vol. 20, no. 1, pp. 16, 2015. (**Cover Article & Best Paper Award 2016**)
- [J24] **Chenshu Wu**, Zheng Yang, Yunhao Liu, “*Smartphones based Crowdsourcing for Indoor Localization*”, IEEE Transactions on Mobile Computing (**IEEE TMC**), vol.14, no.2, pp.444-457, Feb. 2015.
- [J25] **Chenshu Wu**, Zheng Yang, Yu Xu, Yiyang Zhao, Yunhao Liu, “*Human Mobility Enhances Global Positioning Accuracy for Mobile Phone Localization*”, IEEE Transactions on Parallel and Distributed Systems (**IEEE TPDS**), vol.26, no.1, pp.131-141, Jan. 2015.
- [J26] Zheng Yang, Longfei Shangguan, Yunhao Liu, Weixi Gu, Zimu Zhou, **Chenshu Wu**, “*Sherlock: Micro-environment Sensing for Smartphones*”, IEEE Transactions on Parallel and Distributed Systems (**IEEE TPDS**), vol.25, no.12, pp.3295-3305, Dec. 2014.
- [J27] Xinglin Zhang, Zheng Yang, **Chenshu Wu**, Wei Sun, and Yunhao Liu, “*Robust Trajectory Estimation for Crowdsourcing-based Mobile Applications*”, IEEE Transactions on Parallel and Distributed Systems (**IEEE TPDS**), vol.25, no.7, pp.1876-1885, July 2014.
- [J28] Zimu Zhou, Zheng Yang, **Chenshu Wu**, Longfei Shangguan, and Yunhao Liu, “*Omnidirectional Coverage for Device-free Passive Human Detection*”, IEEE Transactions on Parallel and Distributed Systems (**IEEE TPDS**), vol.25, no.7, pp.1819-1829, July 2014.
- [J29] **Chenshu Wu**, Zheng Yang, Yunhao Liu, and Wei Xi, “*WILL: Wireless Indoor Localization without Site Survey*”, IEEE Transactions on Parallel and Distributed Systems (**IEEE TPDS**), vol.24, no.4, pp.839-848, April 2013.
- [J30] Zheng Yang, Lirong Jian, **Chenshu Wu**, and Yunhao Liu, “*Beyond Triangle Inequality: Sifting Noisy and Outlier Distance Measurements for Localization*”, ACM Transactions on Sensor Networks (**ACM TOSN**), vol.9, no.2, pp.26:1-26:20, March 2013.
- [J31] Zheng Yang, **Chenshu Wu**, Tao Chen, Yiyang Zhao, and Yunhao Liu, “*Detecting Outlier Measurements based on Graph Rigidity for Wireless Sensor Network Localization*”, IEEE Transactions on Vehicular Technology (**IEEE TVT**), vol.62, no.1, pp.374-383, Jan. 2013.

Conference Papers

- [C1] Kun Qian, Yumeng Lu, Kai Zhang, Kehong Huang, Xinjun Cai, **Chenshu Wu**, Yunhao Liu, Zheng Yang, “*Hidden Screen-Camera Communication on an Invisible and Inaudible Dual Channel*”, USENIX Symposium on Networked Systems Design and Implementation (**USENIX NSDI**), Boston, MA, USA, April 12-14, 2021 [acceptance ratio: 19/114=16.7%]
- [C2] **Chenshu Wu**, Feng Zhang, Beibei Wang, K. J. Ray Liu, “*mmTrack: Passive Multi-Person Localization Using Commodity Millimeter Wave Radio*”, IEEE International Conference on Computer Communications (**IEEE INFO-COM**), Beijing, China, April 27-30, 2020. [acceptance ratio: 268/1354=19.8%]
- [C3] **Chenshu Wu**, K. J. Ray Liu, “*Accurate Stride Length Estimation via Fused Radio and Inertial Sensing*”, IEEE 6th World Forum on Internet of Things (**IEEE WF-IoT**), New Orleans, USA, April 5-9, 2020.
- [C4] Yuqian Hu*, Feng Zhang, **Chenshu Wu**, Beibei Wang, K. J. Ray Liu, “*A WiFi-based Passive Fall Detection System*”, IEEE International Conference on Acoustics, Speech, and Signal Processing (**IEEE ICASSP**), Barcelona, Spain, May 4-8, 2020.
- [C5] Yusen Fan*, Feng Zhang, **Chenshu Wu**, Beibei Wang, K. J. Ray Liu, “*Indoor Heading Direction Estimation Using RF Signals*”, IEEE International Conference on Acoustics, Speech, and Signal Processing (**IEEE ICASSP**), Barcelona, Spain, May 4-8, 2020.
- [C6] Fengyu Wang*, Feng Zhang, **Chenshu Wu**, Beibei Wang, K. J. Ray Liu, “*VIMO: Vital Sign Monitoring Using Commodity Millimeter Wave Radio*”, IEEE International Conference on Acoustics, Speech, and Signal Processing (**IEEE ICASSP**), Barcelona, Spain, May 4-8, 2020.

- [C7] **Chenshu Wu**, Feng Zhang, Yusen Fan, K. J. Ray Liu, “*RF-based Inertial Measurement*”, **ACM SIGCOMM**, Beijing, China, August 19-24, 2019. [acceptance ratio: 32/221=14.5%]
- [C8] Yue Zheng*, Yi Zhang, Kun Qian*, Guidong Zhang, Yunhao Liu, **Chenshu Wu**, Zheng Yang, “*Widar3.0: Zero-Effort Cross-Domain Gesture Recognition With Wi-Fi*”, ACM International Conference on Mobile Systems, Applications, and Services (**ACM MobiSys**), Seoul, Korea, 18th - 20th June, 2019. [acceptance ratio: 40/172=23.2%]
- [C9] 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**), 29 April - 2 May 2019, Paris, France. [acceptance ratio: 288/1464=19.8%]
- [C10] Kai Zhang†, **Chenshu Wu**†, Chaofan Yang, Yi Zhao, Kehong Huang, Chunyi Peng, Yunhao Liu, and Zheng Yang, “*ChromaCode: A Fully Imperceptible Screen-Camera Communication System*”, ACM International Conference on Mobile Computing and Networking (**ACM MobiCom**), New Delhi, India, Oct 29-Nov 2, 2018. (†: *co-primary authors*) [acceptance ratio: 30/178=16.9%]
- [C11] Kun Qian*, **Chenshu Wu**, Yi Zhang, Guidong Zhang, Zheng Yang, Yunhao Liu, “*Widar2.0: Passive Human Tracking with a Single Wi-Fi Link*”, ACM International Conference on Mobile Systems, Applications, and Services (**ACM MobiSys**), Munich, Germany, June 10-15, 2018. [acceptance ratio: 37/138=26.8%]
- [C12] Kun Qian*, **Chenshu Wu**, Fu Xiao, Yue Zheng, Yi Zhang, Zheng Yang, “*Acousticcardiogram: Monitoring Heartbeats using Acoustic Signals on Smart Devices*”, IEEE International Conference on Computer Communications (**IEEE INFOCOM**), Honolulu, HI, USA, April 15-19 2018. [acceptance ratio: 309/1606=19.2%]
- [C13] Yue Zheng*, Tianmeng Hang*, Kun Qian*, **Chenshu Wu**, Zheng Yang and Xiancun Zhou, “*WiSH: The Design and Implementation of a Real-Time System for Whole-Day Human Detection*”, IEEE International Conference on Parallel and Distributed Systems (**IEEE ICPADS**), Shenzhen, China, Dec 15 - Dec 17, 2017. [acceptance ratio: 89/271=32.8%]
- [C14] Kun Qian*, **Chenshu Wu**, Zheng Yang, Yunhao Liu, Kyle Jamieson, “*Widar: Decimeter-Level Passive Tracking via Velocity Monitoring with Commodity Wi-Fi*”, ACM International Symposium on Mobile Ad Hoc Networking and Computing (**ACM MobiHoc**), Chennai, India, July 10-14, 2017. [acceptance ratio: 27/170=16%]
- [C15] Yue Zheng*, **Chenshu Wu**, Kun Qian, Zheng Yang, Yunhao Liu, “*Detecting Radio Frequency Interference for CSI Measurements on COTS WiFi Devices*”, IEEE International Conference on Communications (**IEEE ICC**), Paris, France, May 21-25, 2017. [acceptance ratio: 1172/3074=38.1%]
- [C16] Kun Qian*, **Chenshu Wu**, Zimu Zhou, Yue Zheng, Zheng Yang, Yunhao Liu, “*Inferring Motion Direction using Commodity Wi-Fi for Interactive Exergames*”, ACM CHI Conference on Human Factors in Computing Systems (**ACM CHI**), Denver, USA, May 6-11, 2017. (**Best Paper Honorable Mention**) [acceptance ratio: 600/2400=25%]
- [C17] Qizhen Zhou*, **Chenshu Wu**, Jianchun Xing, Juelong Li, Zheng Yang, Qiliang Yang, “*Wi-Dog: Monitoring School Violence with Commodity WiFi Devices*”, the 12th International Conference on Wireless Algorithms, Systems, and Applications (**Springer WASA**), Guilin, China, June 19-21, 2017.
- [C18] Kun Qian*, **Chenshu Wu**, Zheng Yang, Chaofan Yang, Yunhao Liu, “*Decimeter Level Passive Tracking with WiFi*”, the 3rd ACM Workshop on Hot Topics in Wireless (**ACM HotWireless**), New York, USA, Oct 03, 2016.
- [C19] Zuwei Yin*, **Chenshu Wu**, Zheng Yang, Nicholas Lane, Yunhao Liu, “*ppNav: Peer-to-Peer Indoor Navigation for Smartphones*”, IEEE International Conference on Parallel and Distributed Systems (**IEEE ICPADS**), Wuhan, China, Dec 13 - Dec 16, 2016. [acceptance ratio: 123/412=30%]
- [C20] Chaofan Yang*, **Chenshu Wu**, Zheng Yang, Tongtong Liu, Yunhao Liu, Xufei Mao, “*Enhancing Industrial Video Surveillance over Wireless Mesh Networks*”, IEEE International Conference on Computer Communication and Networks (**IEEE ICCCN**), Waikoloa, USA, Aug 01 - Aug 04, 2016. [acceptance ratio: 30%]
- [C21] Zimu Zhou, Zheng Yang, Kun Qian, **Chenshu Wu**, Longfei Shangguan, Han Xu, Yunhao Liu, “*Tracking Synchronous Gestures with WiFi*”, IEEE International Conference on Computer Communication and Networks (**IEEE ICCCN**), Waikoloa, USA, Aug 01 - Aug 04, 2016. [acceptance ratio: 30%]

- [C22] Kun Qian*, **Chenshu Wu**, Zheng Yang, Zimu Zhou, Xu Wang, Yunhao Liu, “*Tuning by Turning: Enabling Phased Array Signal Processing for WiFi with Inertial Sensors*”, IEEE International Conference on Computer Communications (**IEEE INFOCOM**), San Francisco, USA, Apr 10 - Apr 15, 2016. [acceptance ratio: 300/1644=18.2%]
- [C23] Zimu Zhou, Zheng Yang, **Chenshu Wu**, Yunhao Liu, Lionel M. Ni, “*On Multipath Link Characterization and Adaptation for Device-free Human Detection*”, IEEE International Conference on Distributed Computing Systems (**IEEE ICDCS**), Columbus, USA, June 29 - July 2, 2015. [acceptance ratio: 70/543=12.9%]
- [C24] **Chenshu Wu**, Zheng Yang, Chaowei Xiao, Chaofan Yang, Yunhao Liu, Mingyan Liu, “*Static Power of Mobile Devices: Self-updating Radio Maps for Wireless Indoor Localization*”, IEEE International Conference on Computer Communications (**IEEE INFOCOM**), Hong Kong, April 26 - May 1, 2015. [acceptance ratio: 316/1640=19.3%]
- [C25] **Chenshu Wu**, Zheng Yang, Zimu Zhou, Kun Qian, Yunhao Liu, Mingyan Liu, “*PhaseU: Real-time LOS Identification with WiFi*”, IEEE International Conference on Computer Communications (**IEEE INFOCOM**), Hong Kong, April 26 - May 1, 2015. [acceptance ratio: 316/1640=19.3%]
- [C26] Kun Qian*, **Chenshu Wu**, Zheng Yang, Yunhao Liu, Zimu Zhou, “*PADS: Passive Detection of Moving Targets with Dynamic Speed using PHY Layer Information*”, IEEE International Conference on Parallel and Distributed Systems (**IEEE ICPADS**), Hsinchu, Taiwan, December 16 - 19, 2014. (**Best Paper Candidate, 4 out of 322**) [acceptance ratio: 96/322=29.8%]
- [C27] Longfei Shangguan, Zheng Yang, Zimu Zhou, Xiaolong Zheng, **Chenshu Wu**, Yunhao Liu, “*CrossNavi: Enabling Real-time Crossroad Navigation for the Blind with Commodity Phones*”, ACM International Joint Conference on Pervasive and Ubiquitous Computing (**ACM UbiComp**), Seattle, USA, Sep 13 - Sep 17, 2014. [acceptance ratio: 71/454=15.6%]
- [C28] Zimu Zhou, Zheng Yang, **Chenshu Wu**, Wei Sun, Yunhao Liu, “*LiFi: Line-Of-Sight Identification with WiFi*”, IEEE International Conference on Computer Communications (**IEEE INFOCOM**), Toronto, Canada, April 27 - May 2, 2014. [acceptance ratio: 319/1650=19.3%]
- [C29] Wei Sun, Junliang Liu, **Chenshu Wu**, Zheng Yang, Xinglin Zhang, and Yunhao Liu, “*MoLoc: on Distinguishing Fingerprint Twins*”, IEEE International Conference on Distributed Computing Systems (**IEEE ICDCS**), Philadelphia, USA, July 08-11, 2013. [acceptance ratio: 61/365=16.7%]
- [C30] **Chenshu Wu**, Zheng Yang, Yiyang Zhao, Yunhao Liu, “*Footprints Elicit the Truth: Improving Global Positioning Accuracy via Local Mobility*”, IEEE International Conference on Computer Communications (**IEEE INFOCOM**), Turin, Italy, April 14-19, 2013. [acceptance ratio: 280/1613=17.4%]
- [C31] Zimu Zhou, Zheng Yang, **Chenshu Wu**, Long-fei Shangguan, Yunhao Liu, “*Towards Omnidirectional Passive Human Detection*”, IEEE International Conference on Computer Communications (**IEEE INFOCOM**), Turin, Italy, April 14-19, 2013. [acceptance ratio: 280/1613=17.4%]
- [C32] Zheng Yang, **Chenshu Wu**, Yunhao Liu, “*Locating in Fingerprint Space: Wireless Indoor Localization with Little Human Intervention*”, ACM International Conference on Mobile Computing and Networking (**ACM MobiCom**), Istanbul, Turkey, August 22-26, 2012. [acceptance ratio: 32/212=15%]
- [C33] **Chenshu Wu**, Zheng Yang, Yunhao Liu, Wei Xi, “*WILL: Wireless Indoor Localization Without Site Survey*”, IEEE International Conference on Computer Communications (**IEEE INFOCOM**), Orlando, Florida, USA, March 25-30, 2012. [acceptance ratio: 278/1547=18%]
- [C34] **Chenshu Wu**, Zheng Yang, Tao Chen, et al, “*Edge Verifiability: Characterizing Outlier Measurements for Wireless Sensor Network Localization*”, IEEE International Conference on Mobile Ad-hoc and Sensor Systems (**IEEE MASS**), Valencia, Spain, October 17-22, 2011. [acceptance ratio: 49/256=19.1%]

GRANTS &
PROPOSALS

Highlights: PI/Co-PI of 5 projects, including two NSF China granted funds.

- [G1] **PI**, Wireless Contactless Sensing for Industrial Internet, NSF China General Program, CNY 780K (USD 117K), 2017
- [G2] **Co-PI**, Research on the Architecture and Key Technologies for Industrial Internet, NSF China Key Program, CNY 2.85M (USD 427K), 2017
- [G3] **PI**, Decimeter-Level Tracking using WiFi Signals, China Postdoctoral Science Foundation Special Program, CNY 150K (USD 23K), 2017
- [G4] **PI**, Research on Sensorless Sensing with Wireless Signals, China Postdoctoral Science Foundation General Program, CNY 50K (USD 7.5K), 2016
- [G5] **PI**, Passive Human Detection using Wireless Channel State Information, Open Program of Jiangsu High Technology Research Key Laboratory for Wireless Sensor Networks, CNY 100K (USD 15K), 2015

PATENTS

US/International Patents (Filed/Granted a dozen of US and international patents and over 20 Chinese patents)

- [P1] “Method, apparatus, and system for wireless gait recognition”, US-2020202117-A1
- [P2] “Method, apparatus, and system for wireless object scanning”, US-2020191913-A1
- [P3] “Method, apparatus, and system for wireless object tracking”, US-2020191943-A1
- [P4] “Method, apparatus, and system for outdoor target tracking”, US-2020182995-A1
- [P5] “Method, apparatus, server and system for real-time vital sign detection and monitoring”, US-10495725-B2
- [P6] “Method, apparatus, server and system for vital sign detection and monitoring”, US-2019166030-A1
- [P7] “Method, apparatus, and system for object tracking and sensing using broadcasting”, US-2019327124-A1
- [P8] “Method, device and system for object tracking and navigation”, JP-2019179020-A
- [P9] “Method, apparatus, and system for object tracking and navigation”, EP-3492946-A1
- [P10] “Apparatus, systems and methods for fall-down detection based on a wireless signal”, US-10397039-B2
- [P11] “Apparatus, systems and methods for fall-down detection based on a wireless signal”, JP-2019130289-A
- [P12] “Apparatus, systems and methods for event recognition based on a wireless signal”, US-10374863-B2
- [P13] “Apparatus, systems and methods for event detection and recognition based on a wireless signal”, EP-3492944-A1
- [P14] “Apparatus, system, and method for recognize event on the basis of wireless signal”, JP-2019133639-A
- [P15] “Method, apparatus, and system for periodic motion detection and monitoring”, JP-2019111321-A
- [P16] “Method, apparatus, and system for periodic motion detection and monitoring”, EP-3492945-A1

PROFESSIONAL **Editorship**

SERVICES

- Associate Editor, IEEE ACCESS, 2020 - present
- Guest Editor, Special Issue on “Cloud Computing-based Big Data Processing and Intelligent Analytics”, Concurrency and Computation: Practice and Experience, published in November 2019.

Program Committee Member for

- 2020: IEEE TrustCom, IEEE MIPR
- 2019: IEEE DySPAN, IEEE ICPADS, IEEE MIPR
- 2018: IEEE UIC, IEEE ICCCN
- 2017: IEEE INFOCOM, IEEE ICDCS, IEEE UIC
- 2016: IEEE UIC

Conference & Workshop Organizer for

- Panel Co-chair for the 11th ACM International Workshop on IoT and Cloud Computing
- PC Co-chair for the 10th ACM International Workshop on IoT and Cloud Computing
- Poster Co-chair for the 9th ACM International Workshop on IoT and Cloud Computing
- PC Co-chair the 8th International Workshop on IoT and Cloud Computing

Reivewer for

ACM/IEEE Transactions on Networking; IEEE Transactions on Mobile Computing; PACM on Interactive, Mobile, Wearable and Ubiquitous Technologies; IEEE Journal on Selected Areas in Communications; IEEE Transactions on Parallel and Distributed Systems; IEEE Transactions on Vehicular Technology; ACM Transactions on Sensor Networks; IEEE Transactions on Signal Processing; IEEE Transactions on Wireless Communications; ACM Transactions on Intelligent Systems and Technology; IEEE Transactions on Industrial Electronics; IEEE Transactions on Automation Science and Engineering; IEEE Transactions on Network Science and Engineering; IEEE Internet of Things Journal; IEEE Communications Letters; IEEE Access; Elsevier Computer Networks; Elsevier Computer Communications; Wireless Communications and Mobile Computing

TEACHING
EXPERIENCE

- **Guest Lecturer:** Wireless Localization for Smartphones
Graduate Course: The Frontiers of Computer Networking
Spring 2014, Spring 2015, Spring 2016, Tsinghua University
- **Teaching Assistant:** The Frontiers of Computer Networking (THSS-MSRA Joint Graduate Course)
Spring 2015, Tsinghua University
- **Teaching Assistant:** The Frontiers of Computer Networking (Graduate Course)
Spring 2013, Tsinghua University
- **Teaching Assistant:** Computer Networks (Undergraduate Course)
Fall 2011, Fall 2012, Tsinghua University
- **Teaching Assistant:** Professional Making Training (Undergraduate Course)
Fall 2010, Tsinghua University

INVITED TALKS

- [1] “Precise Passive Tracking with COTS WiFi”, The George Washington University, DC, USA, May 2018
- [2] “WiFi Radar: Wireless Sensing with Commodity WiFi”, University of Maryland, College Park, MD, USA, October 2017
- [3] “Sensorless Sensing with WiFi”, Nanjing University, Nanjing, China, December 2016
- [4] “Wireless, Contactless, Sensorless Sensing”, Yanshan University, Qinhuangdao, China, December 2015
- [5] “Wireless Indoor Localization via Crowdsourcing”, West Anhui University, Lu’an, China, October 2015
- [6] “Re-imaging Mobile Sensing: Myths, Challenges, and Opportunities”, Wuxi IoT Center, China, December 2014
- [7] “Wireless Indoor Localization for Smartphones”, HKPU, Hong Kong, China, August 2013
- [8] “A Brief Introduction to Mobile Localization”, Tsinghua, Beijing, China, June 2013 (A tour talk representing the School of Software to visiting students from HKUST)

MENTORSHIP I am fortunate to work with many talented students as a research mentor or a close collaborator:

Graduate Mentorship

- Sai Deepika Regani (Ph.D. candidate, UMD), 2017 - 2020, WF-IOT
- Fengyu Wang (Ph.D. candidate, UMD), 2017 - 2020, IOTJ×2/ICASSP/WF-IOT
- Yuqian Hu (Ph.D. student, UMD), 2017 - 2020, ICASSP
- Yusen Fan (Ph.D. student, UMD), 2017 - 2020, ICASSP
- Kun Qian (Ph.D., Tsinghua), 2014 - 2017, now postdoc at UCSD, NSDI/MobiSys/INFOCOM×2/CHI/MobiHoc
- Zuwei Yin (Ph.D., Tsinghua), 2014 - 2017, now CTO of Honor Trends, JSAC/ICPADS
- Yue Zheng (Ph.D., Tsinghua), 2015 - 2017, MobiSys/ICPADS/ICC
- Junjie Yin (Ph.D. student, Tsinghua), 2016 -2017, TOSN
- Tianmeng Hang (master, Tsinghua), 2015 - 2018, now Software Engineer at Tencent, ICPADS
- Chaofan Yang (master, Tsinghua), 2014 - 2017, now Software Engineer at Microsoft, ICCCN

Undergraduate Mentorship

- Jingao Xu (Tsinghua), 2016.07-2017.04, now PhD student at Tsinghua, IMWUT
- Erqun Dong (Tsinghua), 2016.07-2017.04, now PhD student at McGill, INFOCOM
- Hengjie Chen (Tsinghua), 2016.07-2017.04, now master student at Tsinghua
- Liang Dong (Tsinghua), 2015.07-2016.07, now founders of Tanker Tech
- Yu Bao (Tsinghua), 2015.07-2016.07, now founders of Tanker Tech
- Chaowei Xiao (Tsinghua), 2014.07-2015.07, now PhD student at University of Michigan
- 2014.07-2015.07: **Vice Director of the Student Affairs Office in School of Software, Tsinghua University**
- 2010.08-2014.07: **Counsellor of over 60 undergraduates of class 2010 in School of Software, Tsinghua University (won over 10 Excellent Collective Awards and the Lin Feng Counsellor Award)**