

# Xiaoxuan LU

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RESEARCH INTERESTS	<b>Core:</b> Mobile and Ubiquitous Computing, Cyber-Physical Systems <b>Applications:</b> IoT, HCI, Security and Privacy	
EDUCATION	<b>University of Oxford, UK</b> PhD in Computer Science, 2015 ~ 2019 <ul style="list-style-type: none"><li>– Google-DeepMind PhD Fellowship</li><li>– Thesis: <i>Robustly Inferring Identity across Digital and Physical Spaces</i></li><li>– PhD Committee: Prof. Niki Trigoni (advisor), Dr. Andrew Markham (co-advisor), Dr. Thomas Ploetz and Dr. Nic Lane</li><li>– Citations 355, h-index 8</li></ul> <b>Nanyang Technological University (NTU), Singapore</b> M.Eng in Electrical and Electronic Engineering, 2013 ~ 2015 <ul style="list-style-type: none"><li>– 1st in the same-year group</li><li>– Thesis: <i>Development of Data-driven Localization Algorithms for a WiFi Based Indoor Positioning System</i></li><li>– Advisor: Prof. Lihua Xie (IEEE Fellow)</li></ul> <b>Nanjing University of Aeronautics and Astronautics (NUAA), P.R. China</b> B.Eng. in Automation Engineering, 2009 ~ 2013 <ul style="list-style-type: none"><li>– Ranked top 1% (2nd out of 203)</li><li>– Outstanding Graduate Award</li></ul>	
FELLOWSHIPS AND AWARDS	Chinese Government Award for Outstanding Students Abroad	2019
	Graduate Study Award	2019
	Google-Deepmind PhD Fellowship	2015 ~ 2018
	Oxford-Keble Association Study Awards ×3	2016 ~ 2018
	Master of Engineering Award of NTU ×3	2013 ~ 2015
	Outstanding Graduate Award of NUAA	2013
	NUAA Chancellor Fellowship in Academic Work (1/16000 students)	2012
	CASC Scholarship (2/16000 students)	2012
	CATIC Scholarship (7/4000 students)	2011
	National Scholarship of China (Top 1%)	2010
	Grand Prize of National Electrical Control and Design Contest	2012
	Excellent Student Cadre of Jiangsu Province	2012
	First-class Honour Scholarship (Top 2%) ×3	2010-2013
TRAVEL GRANTS	Faith Ivens-Franklin Travel Grant	2018
	Student Travel Grant @ Ubicomp	2018
	Student Travel Grant @ SenSys	2017

## PUBLICATIONS **Journal Articles:**

5. **Xiaoxuan Lu**, Han Zou, Hongming Zhou, Lihua Xie, Guangbin Huang. "Robust Extreme Learning Machine with Its Application to Indoor Positioning.", IEEE Transactions on Cybernetics, 2015. (**impact factor: 7.384**)
4. Changhao Chen, **Xiaoxuan Lu**, Johan Wahlstrom, Andrew Markham and Niki Trigoni. "Deep Inertial Navigation: a Deep Learning Approach for Inertial Navigation Using Low-cost IMUs.", submitted to IEEE Transactions on Mobile Computing, 2018. (**impact factor: 3.882**)
3. Han Zou, Baoqi Huang, **Xiaoxuan Lu**, Hao Jiang and Lihua Xie. "A Robust Indoor Positioning System based on the Procrustes Analysis and Weighted Extreme Learning Machine.", IEEE Transactions on Wireless Communications, 2014. (**impact factor: 4.951**)
2. Hongkai Wen, Ronald Clark, Sen Wang, **Xiaoxuan Lu**, Bowen Du, Wen Hu and Niki Trigoni. "Efficient Indoor Positioning with Visual Experiences via Lifelong Learning.", IEEE Transactions on Mobile Computing, 2018. (**impact factor: 3.822**)
1. Stefano Rosa, Andrea Patanè, **Xiaoxuan Lu**, Niki Trigoni, "Semantic Place Understanding for Human-Robot Cooperation - Towards Intelligent Workplaces", IEEE Transactions on Human-Machine Systems, 2018. (**impact factor: 2.493**)

## **Conference Full Papers:**

15. **Xiaoxuan Lu**, Xuan Kan, Bowen Du, Changhao Chen, Hongkai Wen, Andrew Markham, Niki Trigoni and John Stankovic. "Autonomous Learning for Face Recognition in the Wild via Ambient Wireless Cues" In *ACM International World Wide Web Conference (WWW'2019)*. Core Rank: A\*
14. **Xiaoxuan Lu**, Yang Li, Peijun Zhao, Changhao Chen, Linhai Xie, Hongkai Wen, Rui Tan and Niki Trigoni. "Simultaneous Localization and Mapping with Power Network Electromagnetic Field." In *ACM International Conference on Mobile Computing and Networking (MobiCom'2018)*. Core Rank: A\*
13. **Xiaoxuan Lu**, Bowen Du, Hongkai Wen, Sen Wang, Andrew Markham, Ivan Marinovic, Yiran Shen and Niki Trigoni. "Snoopy: Sniffing Your Smartwatch Passwords via Deep Sequence Learning." In *ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp'2018)*. Core Rank: A\*
12. **Xiaoxuan Lu**, Bowen Du, Peijun Zhao, Hongkai Wen, Yiran Shen and Niki Trigoni. "DeepAuth: In-situ Authentication for Smartwatches via Deeply Learned Behavioural Biometrics." In *International Symposium on Wearable Computers (ISWC'2018)*. Core Rank: A\*
11. **Xiaoxuan Lu**, Hongkai Wen, Sen Wang, Andrew Markham and Niki Trigoni. "SCAN: Learning Speaker Identity From Noisy Sets of Sensor Data" In *International Conference on Information Processing in Sensor Networks (IPSN'2017)*, Core Rank: A\*
10. Changhao Chen, Stefano Rosa, Yishu Miao, **Xiaoxuan Lu**, Wei Wu, Andrew Markham and Niki Trigoni. "Selective Sensor Fusion for Neural Visual Inertial Odometry." In *Conference on Computer Vision and Pattern Recognition (CVPR'2019)*. Core Rank: A\*
9. Changhao Chen, Yishu Miao, **Xiaoxuan Lu**, Linhai Xie, Andrew Markham and Niki Trigoni. "MotionTransformer: Transferring Physical Motion Between Domains For Neural Inertial Tracking." In *AAAI Conference on Artificial Intelligence (AAAI'2019)*. Core Rank: A\*

8. Changhao Chen, **Xiaoxuan Lu**, Andrew Markham and Niki Trigoni. "IONet: Learning to Cure the Curse of Drift in Inertial Odometry." In *AAAI Conference on Artificial Intelligence (AAAI'2018)*. Core Rank: A\*
7. **Xiaoxuan Lu**, Chenpu Yu, Han Zou, Hao Jiang, Lihua Xie. "Extreme Learning Machine with Dead Zone and its Application to WiFi Based Indoor Positioning." In *13th International Conference on Control, Automation, Robotics and Vision (ICARCV'2014)*. Core Rank: A
6. **Xiaoxuan Lu**, Bowen Du, Xuan Kan, Kai Wu, Man Luo, Jianfeng Hou, Kai Li, Salil Kanhere, Yiran Shen, Hongkai Wen. "HydraDoctor: Real-time Liquids Intake Monitoring by Collaborative Sensing." In *International Conference on Distributed Computing and Networking (ICDCN'2018)*.
5. Peijun Zhao, **Xiaoxuan Lu**, Jianan Wang, Changhao Chen, Wei Wang, Niki Trigoni and Andrew Markham. "mID: Tracking and Identifying People with Millimeter Wave Radar." In *International Conference on Distributed Computing in Sensor Systems (DCOSS'2019)*.
4. **Xiaoxuan Lu**, Hongkai Wen, Han Zou, Hao Jiang, Lihua Xie and Niki Trigoni. "Robust Occupancy Inference with Commodity WiFi." In *International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob'2016)*.
3. Han Zou, Baoqi Huang, **Xiaoxuan Lu**, Hao Jiang and Lihua Xie. "Standardizing Location Fingerprints Across Heterogeneous Mobile Devices for Indoor Localization." In *14th Wireless Communications and Networking Conference (WCNC'2016)*.
2. Han Zou, Yiwen Luo, **Xiaoxuan Lu**, Hao Jiang and Lihua Xie. "A Mutual Information based Online Access Point Selection Strategy for WiFi Indoor Localization." In *11th International Conference on Automation Science and Engineering (CASE'2015)*.
1. Han Zou, Hao Jiang, **Xiaoxuan Lu**, and Lihua Xie. "An Online Sequential Extreme Learning Machine Approach to WiFi Based Indoor Positioning". In *1st World Forum on the Internet of Thing (WF-IoT'14)*.

#### Demos & Posters:

2. **Xiaoxuan Lu**, Peijun Zhao, Bowen Du, Hongkai Wen, Andrew Markham, Stefano Rosa and Niki Trigoni "Demo: Automatic Face Recognition Adaptation via Ambient Wireless Identifiers" In *International Conference on Embedded Networked Sensor Systems (SenSys'18)*, ACM, 2018.
1. **Xiaoxuan Lu**, Xuan Kan, Stefano Rosa, Bowen Du, Hongkai Wen, Andrew Markham and Niki Trigoni "Poster: Towards Self-supervised Face Labeling via Cross-modality Association." In *International Conference on Embedded Networked Sensor Systems (SenSys'17)*, ACM, 2017.

SERVICE

**TPC:** EWSN'2018 (Demo/Poster), ICC'2019, PhD Forum@MobiSys'2019

**Session Chair:** ACM DATA@SenSys'2018

**External Reviewer:** IJCAI'2019, CHI'2019, UbiComp'2019

**Journal Reviewer:** ACM IMWUT, IEEE Transactions on Mobile Computing (TMC), IEEE Internet of Things Journal (IIoT), IEEE Computational Intelligence Magazine, IEEE Transactions on Cybernetics, Autonomous Robots

INVITED  
TALKS

*Title: Robustly Inferring Identity across Digital and Physical Worlds*  
7<sup>th</sup> East Lake International Forum for Outstanding Overseas Young Scholars @Huazhong  
University of Science and Technology (December 2018)

*Title: Autonomous Identity Inference across Cyber and Physical Worlds*  
Department Seminar Talk @University of Cambridge (November 2018)

TEACHING  
EXPERIENCE

*Embedded Software and Systems*  
Graduate course, University of Oxford, Department of Computer Science, 2019

*Sensor and Actuator Networks*  
Graduate/Undergraduate course, University of Oxford, Department of Engineering, 2019

*Internet of Things*  
Graduate course, University of Oxford, Department of Computer Science, 2018

*Mobile and Sensor Networks*  
Graduate course, University of Oxford, Department of Computer Science, 2017

*Introduction to Programming (Python)*  
Undergraduate course, Nanyang Technology University, School of Electrical and  
Electronic Engineering, 2014

REFERENCES

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**Prof. John A. Stankovic** (Fellow of ACM&IEEE)

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