XIJIA WEI

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Education

University College London *London, UK*

PH.D. IN UCL INTERACTION CENTRE *May. 2022 - Present*

- **Research Interest**: Multimodal Machine Learning, Ubiquitous Computing, Sensing Technology, AI for Healthcare
- **Primary Supervisor**: Prof. Nadia Berthouze

The University of Edinburgh *Edinburgh, UK*

M.SC ARTIFICIAL INTELLIGENCE *Sep. 2017 - Nov. 2018*

- **Research Interest**: Applied Machine Learning, Ubiquitous Computing, Context Awareness
- **Supervisor**: Prof. Valentin Radu
- **M.Sc Thesis**: Smartphone-based Location Tracking using Recurrent Neural Networks

The University of Edinburgh *Edinburgh, UK*

B.ENG (HONOURS) ELECTRONICS AND ELECTRICAL ENGINEERING *Sep. 2013 - July. 2017*

- **Research Interest**: Machine Learning, Wearable Technology, Cyber Physical Systems
- **Supervisor**: Prof. Tughrul Arslan
- **B.Eng Thesis**: Artificial Neural Network Based Indoor Positioning System

Publications

[1] **X. Wei** and V. Radu, "Leveraging transfer learning for robust multimodal positioning systems based on smartphone multi-sensory data," in *2022 International Conference on Indoor Positioning and Indoor Navigation (IPIN)*, pp. 1–8, IEEE, 2022.

[2] **X. Wei** and V. Radu, "MMLoc+: A transfer learning based multimodal machine learning localization system for dynamic sensor networks," in *2022 UK Mobile, Wearable and Ubiquitous Systems Research Symposium (MobiUK)*, MobiUK, 2022.

[3] **X. Wei**, Z. Wei, and V. Radu, "Sensor-fusion for smartphone location tracking using hybrid multimodal deep neural networks," *Sensors*, vol. 21, no. 22, p. 7488, 2021. doi: 10.3390/s21227488.

[4] **X. Wei**, Z. Wei, and V. Radu, "MM-Loc: Cross-sensor indoor smartphone location tracking using multimodal deep neural networks," in *2021 International Conference on Indoor Positioning and Indoor Navigation (IPIN)*, pp. 1–8, IEEE, 2021. doi: 10.1109/IPIN51156.2021.9662519.

[5] **X. Wei** and V. Radu, "Calibrating recurrent neural networks on smartphone inertial sensors for location tracking," in *2019 International Conference on Indoor Positioning and Indoor Navigation (IPIN)*, pp. 1–8, IEEE, 2019. doi: 10.1109/IPIN.2019.8911768.

[6] **X. Wei** and V. Radu, "End-to-end machine learning for smartphone-based indoor localisation and tracking using recurrent neural networks," in *2018 UK Mobile, Wearable and Ubiquitous Systems Research Symposium (MobiUK)*, MobiUK, 2018.

Presentations

International Conference on Indoor Positioning and Indoor Navigation (IPIN) 2022 *Beijing, China*

CONFERENCE PRESENTER FOR <MACHINE LEARNING SESSION> @CHINESE ACADEMY OF SCIENCES *Sep. 2022*

- Leveraging Transfer Learning for Robust Multimodal Positioning Systems based on Smartphone Multisensory Data

International Conference on Indoor Positioning and Indoor Navigation (IPIN) 2021 *Barcelona, Spain*

CONFERENCE PRESENTER FOR <MACHINE LEARNING SESSION> @UNIVERSITAT OBERTA DE CATALUNYA *Nov. 2021*

- Introduced an end-to-end multimodal deep neural network based smartphone cross-sensor tracking system

International Conference on Indoor Positioning and Indoor Navigation (IPIN) 2019 *Pisa, Italy*

CONFERENCE PRESENTER FOR <MACHINE LEARNING SESSION> @UNIVERSITY OF PISA *Oct. 2019*

- Introduced a sensor-fusion based pedestrian location tracking system using recurrent neural networks

UK Mobile, Wearable and Ubiquitous Systems Research Symposium (MobiUK) 2018 *Cambridge, UK*

SYMPOSIUM PRESENTER FOR <UBIQUITOUS COMPUTING SESSION> @UNIVERSITY OF CAMBRIDGE *Sep. 2018*

- Introduced an infrastructure-free smartphone locationing system based on inertial sensor data

Academic Research Symposium of Information and Control Engineering 2017 *Liaoning, China*

SYMPOSIUM PRESENTER FOR <CYBER PHYSICAL SYSTEM ACADEMIC SYMPOSIUM> @LIAONING SHIHUA UNIVERSITY *Aug. 2017*

- Introduced artificial intelligence applications in cyber physical systems

Experiences

Ubiquitous AI Lab (Edinburgh-Sheffield Universities Shared Lab)
Edinburgh/Sheffield, UK

AI Researcher
Nov. 2018 - Mar. 2022

- Proposed a novel end-to-end multimodal network architecture for smartphone sensor-fusion tracking system;
- Responsible for research project design, conceptualisation, data analysis and system development;
- Published papers as the first author at the Sensors Journal and the IPIN Conference;
- Presented at the IPIN2021 International Conference.

CNPC
Beijing, China

Fintech Department Manager & Tech Lead
Mar. 2019 - Mar. 2022

- In charge of the FinTech Research Group;
- Led the Commercial Paper Exchange/Risk Management Platform Engineering Team;
- Optimised the system intelligence by utilising AI algorithms to detect money-laundering behaviours;
- Implemented robotic process automation technologies to the Treasury Management System;
- Developed the AI-based Position Investment Strategy Assistant.

Scotland Microelectronics Centre
Edinburgh, UK

AI Researcher
Oct. 2016 - May 2017

- Developed an end-to-end neural network navigation system on smartphone platforms;
- Researched machine learning algorithms to improve human activity recognition accuracy;
- Evaluated system performances using WiFi fingerprints and magnetometer cross-sensory dataset;
- Built an Android application to sample and recognise user activities on smartphones.

Guozi Robotics Co.,Ltd
Hangzhou, China

Embedded Software Engineer & AI Researcher
Jun. 2016 - Aug. 2016

- Optimised the inspection robots chassis control system using supervised machine learning techniques;
- Evaluated real-time robot performances of accuracy and robustness under practical scenarios.

Bank of England
London, UK

Digital Security System Intern
Dec 2015 - Jan 2016

- Worked with the Digital Transaction System Team;
- Investigated on transaction encryption strategies on smartphones;
- Explored the risk management methodologies on mobile platforms.

Awards

2017	**International Student Scholarship**, University of Edinburgh	*Edinburgh, UK*
2016	**International Student Scholarship**, University of Edinburgh	*Edinburgh, UK*

Skills

Artificial Intelligence	Machine Learning & Pattern Recognition, Multimodal Machine Learning, Data Analysis and Mining, Network Architecture Design
Electrical Engineering	Electronics/Electrical System Design, Cyber Physical System Design, Analogue/Signal Circuit Design, Human Computer Interaction
Interpersonal Skills	Fast Learner and High Adaptability, High Working Efficiency, Critical Thinking, Project Management, Presenting/Written Communication
Programming Skills	Python, JAVA, C/C++, Matlab, VHDL, LaTeX, PyTorch, TensorFlow, Keras, Create ML
Languages	Chinese (Native), English (Proficient)
Interest	Violin, Photography