Fei Wu

E-mail: fw407@exeter.ac.uk **Homepage**: https://fei407.github.io/

EDUCATION

University of Exeter, *United Kingdom* Oct. 2023 – Present

Fully funded Ph.D. candidate in Computer Science

- My research interests focus on **parameter-efficient fine-tuning**, federated fine-tuning of foundation models, algorithm-hardware co-design, and efficient AI systems for resource-constrained environments.

University of Electronic Science and Technology of China (UESTC), *China* Sept. 2019 – July 2022

M.Eng. in Electronic and Communication Engineering

- Ranked **23rd** out of 332 students (**Top 6.9%**); awarded the Outstanding Graduate of Sichuan Province

Chengdu University of Technology (CDUT), *China* Sept. 2015 – July 2019

B.Eng. in Electronic and Information Engineering

- Ranked **1st** out of 135 students (**Top 0.7%**); admitted to UESTC (M.Eng.) through direct recommendation

EXPERIENCE

1.University of Exeter – Postgraduate Research Assistant (Computer Science) 2025 – present

- Conducted research on efficient fine-tuning and federated learning systems

2. Chengdu RuiXinXing Co., Ltd. – FPGA Engineer (SLAM) 2022 – 2023

- Investigated efficient algorithm-hardware co-design solutions for mobile robotics SLAM

RESEARCH PUBLICATIONS

[1] **F. Wu**, J. Hu, G. Min, S. Wang, "Efficient Orthogonal Fine-Tuning with Principal Subspace Adaptation," *The Fourteenth International Conference on Learning Representations (**ICLR 2026**)*, April, 2026.

[2] **F. Wu**, J. Hu, G. Min, S. Wang, "Adaptive Rank Allocation for Federated Parameter-Efficient Fine-Tuning of Language Models," *IEEE Transactions on Computers (**IEEE TC**)*, Accepted, Jan. 2026.

[3] Y. Liu, **F. Wu**, N. Zhao et al., "NVP: A Flexible and Efficient Processor Architecture for Accelerating Diverse Computer Vision Tasks including DNN," *IEEE Transactions on Circuits and Systems II: Express Briefs (**TCAS-II**)*, vol. 70, no. 1, pp. 271-275, Jan. 2023.

[4] **F. Wu**, N. Zhao, Y. Liu et al., "A Review of Convolutional Neural Networks Hardware Accelerators for AIoT Edge Computing," *The International Conference on UK-China Emerging Technologies (UCET)*, 2021, pp. 71-76.

[5] Y. Liu, J. Xiao, **F. Wu** et al., "A Fast and Efficient FPGA-based Level Set Hardware Accelerator for Image Segmentation," *Journal of Electronics and Information Technology (JEIT)*, vol. 32, no. 6, pp. 1525-1532, 2021.

RESEARCH PROJECTS

1. EU Horizon Europe, REFINE: Real-time Fine-grained Air Quality Monitoring with Intelligent and Robust Multi-UAV Networks. (PhD Researcher, Grant No. 101129910)

2. EPSRC, New Horizons, Real-Time Federated Learning at the Wireless Edge via Algorithm–Hardware Co-Design. (PhD Researcher, EPSRC Grant EP/X019160/1)

3. EU Horizon Europe, ASCENT: Autonomous Vehicular Edge Computing and Networking for Intelligent Transportation. (PhD Researcher, Grant No. 101086159)

4. NSFC-CAEP, Joint Fund Project, AI Brain Models and Hardware Architectures for Multi-Task Learning in Complex Environments. (Main Research Participant, Grant No. U2030204)

INDUSTRIAL PROJECTS

1. Pedestrian Tracking & Following for Robots, Chengdu Ruixinxing Technology Co., Ltd. 2022 – 2023

- Developed a LiDAR-vision fusion method enabling single-target tracking with **> 95%** success rate
- Implemented an end-to-end system on NVIDIA Jetson Xavier **at 30 FPS**

2. NVP: Neural Visual Processor, SenseTime Co., Ltd. 2020 – 2022

- Designed a multi-core architecture with segmented ring-bus interconnect, achieving **>80% PE utilization**
- Verified single-core prototype on FPGA, demonstrating **3× energy efficiency improvement**
- Conducted PPA evaluation in 40 nm CMOS technology, with **73.81mm^2** area and power consumption **< 2 W**

3. FPGA Accelerator for MRI Segmentation, West China Hospital of Sichuan University 2019 – 2020

- Designed a parallel FPGA architecture for level-set segmentation, **achieving 10.7× speedup with 2.2 W**
- Implemented UART interface and FPGA-based demo

4. Weightel: Vehicle Intelligent Weighing System, Griffith-Elder Co., Ltd. & Camrong Co., Ltd. 2020 – 2022

- Designed in-vehicle weighing and aggregation nodes for calibration and multi-node data fusion
- Developed CAN-bus communication protocol, supporting up to 12 measurement nodes
- Integrated and validated system in real-world environments, achieving **dynamic weighing error < 0.1%**

PATENTS

[1] J. Zhou, L. Chang, L. Zhou, **F. Wu**, Data Processing Method and Apparatus, Computer Device, and Storage Medium PCT/CN2021/115789 (WO2022179075), China Patent CN202110221235.3 (Granted)

[2] J. Zhou, L. Chang, L. Zhou, **F. Wu**, Image Processing Method and Apparatus, Computer Device and Storage Medium PCT/CN2021/115745 (WO2022160704), China Patent CN202110132579.7 (Granted)

[3] J. Zhou, L. Chang, L. Zhou, **F. Wu**, Data Processing Method and Apparatus, Computer Device, and Storage Medium PCT/CN2021/115799 (WO2022160706); China Patent CN202110132573.X (Granted)

AWARDS & HONORS

Competitions

- National Third Prize, The China Graduate Circuit Design Contest 2021
- **National Third Prize**, The China Graduate Electronics Design Contest (**Top 8.3%**) 2021
- **National Second Prize**, The China Graduate Electronics Design Contest (**Top 3.7%**) 2020
- National Second Prize, Huawei Special Competition, The China Graduate Electronics Design Contest 2020

Honors

- Outstanding Graduate of Sichuan Province, China (**nominated from Top 32** in the Department**)** 2022
- Outstanding Graduate of University of Electronic Science and Technology of China 2022

Scholarships

- **Fully funded scholarship,** with additional doctoral funding support 2023 – 2027
- First-Class Academic Scholarship of University of Electronic Science and Technology of China 2021
- Outstanding Student Scholarship of Chengdu University of Technology 2016 – 2018

SERVICES

Reviewer

- Conference: **ICML'26, ICLR'26, AAAI'26**, ICDCS'24, TrustCom'25, HPCC'25, ICESS'25, IUCC'24
- Journal: IEEE TPDS, IEEE TC, IEEE IoTJ, IEEE TAI

Supervision

Mentored an undergraduate student (Harry Min) from the University of Cambridge on a summer research project at Department of Computer Science, University of Exeter (Aug. – Sept. 2024), under the supervision of Prof. Jia Hu.

SKILLS

Certificates	AMD Training – Accelerating Your Application with AMD GPUs NVIDIA Training – Efficient Large Language Model (LLM) Customization
Technical Skills	Programming Languages: **Python**, C, C++, **Verilog**, SystemVerilog, VHDL
	Hardware & Embedded Platforms: **NVIDIA Jetson AGX Orin, Orin Nano Super,** Raspberry Pi 5, AMD Zynq-7035, VC707, ZCU104, Atmel ATSAME51, STM32 series
	Frameworks & Libraries: Pytorch, Hugging Face (Transformers, **PEFT**, Datasets), Flower
	Tools & Platforms: Linux (x86 & ARM), Docker, **Slurm**, TensorBoard, **Weights & Biases**, **Cursor**, PyCharm, MATLAB, Visual Studio Code, **Vivado**
Language Skills	Native Mandarin speaker and fluent in English