Fei Wu

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EDUCATIONAL BACKGROUND

University of Electronic Science and Technology of China (UESTC) 09/2019-06/2022

Master in Electronic and Communication Engineering

- **GPA: 3.4/4.0 Comprehensive Ranking: 23/332**
- Dissertation thesis: The Hardware Design and Implementation of Neural Network Accelerator for Image Processing
- Core Curriculums: Pattern Recognition (91.5), Application Specific Integrated Circuit Design (91) etc.

Chengdu University of Technology (CDUT) 09/2015-06/2019

Bachelor in Electronic Information Engineering

- **GPA: 3.7/5.0 Comprehensive Ranking: 1/135**
- Dissertation thesis: The Design and Implementation of Vehicle Weighing System Based on CAN Bus
- Core Curriculums: Electronic Measurement (98), Microcontroller and Interface (96), Signals and Systems (95) etc.

PROJECT EXPERIENCE

NVP: Neural Visual Processor Design (Funding: ¥1,000,000) 2020-2022

Research Content: Completed the design and implementation of a general-purpose image processor; Implemented CNN, Image Filtering and Stereo Matching algorithms on the same hardware platform.

Deputy project leader, responsible for:

- Designed and Implemented hardware architecture, ISA, DDR interface and multi-core Segmented Ring Bus.
- Accomplished verification and testing of single-core prototype with FPGA.
- Completed PPA evaluation of multi-core 40nm CMOS technology with synthesis and implementation tools.

❖ **Partner: SenseTime Co., Ltd.**

Medical Image Segmentation System based on Level-Set Algorithm (Funding: ¥200,000) 2019-2020

Research Content: Achieved hardware acceleration of MRI image segmentation based on level-set algorithm.

Main researcher, responsible for:

- Designed hardware parallel processing architecture for level set algorithm and UART communication module.
- Designed software of the initial MRI image, initial contour selection and serial port communication.

❖ **Partner: West China Hospital**

Weightel: Vehicle Intelligent Weighing System (Funding: ¥500,000) 2018-2020

Research Content: Achieved weighing of cargo trucks or refuse trucks and displayed the real-time results, centre of gravity, etc. information on the mobile phone terminal.

Project leader, responsible for:

- Completed development of the hardware of nodes, including weight collection nodes and aggregation nodes.
- Designed and implemented Controller Area Network (CAN) communication protocol.
- Completed static weighing and dynamic weighing tests of the whole system for actual loading of vehicles.

❖ **Partner: Griffith-Elder Co., Ltd. and Camrong Co., Ltd.**

Design of Earthquake Search & Rescue System based on WiFi Positioning (Funding: ¥10,000) 2017-2018

Research content: Enabled location of trapped people in earthquake scenarios using WIFI and mobile phones.

Project leader, responsible for:

- Accomplished overall hardware design of the system and the design of the signal detection module.
- Complete outdoor positioning test of the whole system.

❖ **Funding source: Provincial Innovation Training Program for University Students**

PAPERS

[1] 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*, 2022 doi: 10.1109/TCSII.2022.3207009. (Accepted in 08-Sep-2022)

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

[3] Y. Liu, J. Xiao, **F. Wu**, et al., "A FPGA-based Level Set Hardware Accelerator for Image Segmentation," *Journal of Electronics and Information Technology*, vol. 43, no. 6, pp. 1525-1532, Jun. 2021. (Chinese)

[4] **F. Wu**, B. Wang, C. Mao, et al., "Design of Earthquake Search and Rescue System Based on Wifi Positioning," *Wireless Communication Technology*, vol. 44, no. 3, pp. 314-318, Jun. 2018. (Chinese)

[5] **F. Wu**, B. Wang, C. Mao, et al., "Design of the Detection System Based on stm32f103c8t6 Mobile Phone Signal," *Electronics World*, no. 11, pp. 123-123+126, May. 2018. (Chinese)

[6] **F. Wu**, B. Wang, C. Mao, et al., "Prospective Research about NB-IoT in Seismic Applications," *Information and Communications Technology*, vol. 12, no. 4, pp. 41-46, Aug. 2018. (Chinese)

PATENTS (All under review & First student author & Chinese)

[1] J. Zhou, L. Zhou, L. Chang, W. Wang, **F. Wu,** and N. Xu, 2021. An Efficient operation scheme design for edge or small feature map of convolutional neural network. China Sichuan: CN112927125A, 2021-06-08.

[2] J. Zhou, L. Zhou, L. Chang, W. Wang, **F. Wu,** and N. Xu, 2021. Design of an efficient large step size two-dimensional convolution calculation model. China Sichuan: CN112966729A, 2021-06-15.

[3] J. Zhou, L. Zhou, L. Chang, W. Wang, **F. Wu,** and N. Xu, 2021. Design of an efficient convolutional neural network Full-connection layer calculate circuit. China Sichuan: CN112967211A, 2021-06-15.

ACADEMIC COMPETITIONS

- National Third Prize in the 4th China Postgraduate Circuit Design Competition 2021
- National Third Prize of the 16th China Postgraduate Electronic Design Competition 2021
- National Second Prize of the 15th China Postgraduate Electronic Design Competition 2020
- National Second Prize of the 15th CPEDC Huawei Special Competition 2020
- First Prize of the 11th Chengdu University of Technology Electronic Design Competition 2018
- Provincial Second Prize of the 9th Blue Bridge Cup Microcontroller Design Competition 2018

HONORS

- Province-Level and University-Level Outstanding Graduate 2021
- First Prize Postgraduate Academic Scholarship of UESTC (¥10000) 2021
- Second Prize Postgraduate Academic Scholarship of UESTC (¥8000) 2020
- Third Prize Postgraduate Academic Scholarship of UESTC (¥4000) 2019
- University-Level Outstanding Student of CDUT (¥1500) 2018
- University-Level Outstanding Student of CDUT (¥1500) 2017
- University-Level Outstanding Student of CDUT (¥1500) 2016

SKILLS

IT skills	Software: Vivado, Matlab, Visual Studio, Keil, Atmel Studio, PyCharm, QT, ROS
	Software programming language: C, C++, Python
	Hardware programming language: Verilog, VHDL
Language skills	Native Mandarin speaker and proficient in English