

- Bachelor of Science in Electronic Information Science & Technology, GPA: 83.2/100; Rank: 6/41, class of 2016

Nanjing University (NJU), School of Electronic Science and Engineering the Academic Exchange Program 2019.01-2019.02

- Selected into the Ten Thousand Students Program of Jiangsu Province, as the only undergraduate student of our school selected.
- Participate in academic lectures and artificial intelligence development training, learn face recognition, target detection, image processing, etc., and pass the assessment of arm China artificial intelligence development course.

Publications

- [1] **Wei Zhang**. "A Survey of Field Programmable Gate Array-Based Convolutional Neural Network Accelerators". International Journal of Electronics and Communication Engineering. 14(12) 2020. 419-427. <https://publications.waset.org/10011686/pdf>
- [2] **Wei Zhang**. "A Design of 3D Dynamic Display System Based on Voice Control". Internet of Things Technologies. (Preprint)
- [3] **Wei Zhang**. "F-LS: An indoor positioning method and implementation based on Bluetooth low energy location fingerprint-least squares fusion" [J]. Internet of Things Technologies. 2022,12(03):4-6.DOI:10.16667/j.issn.2095-1302.2022.03.001. [[Paper](#)] | [[GitHub](#)]
- [4] **Wei Zhang**. "A Simulated Electromagnetic Curved Shooting Gun Based on Monocular Ranging: Design and Implementation". Internet of Things Technologies. (Preprint)
- [5] Gao Kaige, Liu Chunlin, **Wei Zhang**, Wang Kangni, Liu Wenlong. (2020). *Pyroelectricity and field-induced spin-flop in (4-(Aminomethyl)pyridinium)2 MnCl4·2H2O* [J]. Royal Society Open Science. 7. 200271. 10.1098/rsos.200271.

Books

- [1] **Wei Zhang***. **Computer Vision in Action** - Computer Vision Algorithms and Applications, a Chinese closed-loop e-book contains source code, notebook, tech community. [[Project website](#)] | [[Online book](#)] | [[GitHub](#)]

Patents and Copyrights

★ 17 Patents:

- [6] Invention. **Wei Zhang**. A Full Algorithm Data Playback Tool, Equipment and Storage Medium for Automatic Driving System [P]. (in Examination)
- [7] Invention. **Wei Zhang**. Automatic Driving Virtual Simulation System Based-on QEMU [P]. (In Examination)
- [8] Invention. **Wei Zhang**. A Compact Data Playback Protocol and Its Implementation [P]. (In Examination)
- [9] Invention. **Wei Zhang**. Vulnerability Matching Framework and System for Attack Assessment [P]. PA21119974CN
- [10] Invention. **Wei Zhang**. Network Security Risk Assessment Method, Device, Equipment and Storage Medium [P]. PA21119975CN
- [11] Invention. **Wei Zhang**. An Algorithm, Attack Method and System for Image Embedding Blind Watermark [P]. PA21117882CN
- [12] Invention. **Wei Zhang**. A Method, System and Equipment for Embedding Blind Watermark in Image Based-on Deep Learning [P]. (In Examination)
- [13] Invention. **Wei Zhang**. Touch Control Module, System and Feedback Control Method [P]. CN113641261A,2021-11-12.
- [14] Invention. Lei Ji, **Wei Zhang**. Bluetooth Low Energy (BLE) Communication Relay Method, Device, Equipment and Storage Medium [P]. PA21100821CN
- [15] Invention. Lei Ji, **Wei Zhang**. Method, device, equipment and storage medium for blocking Bluetooth Low Energy (BLE) connection [P]. PA21100820CN
- [16] Invention. **Wei Zhang**, Lei Ji. Bluetooth Device Tracking Method, Device, Equipment and Storage Medium [P]. PA21100823CN
- [17] Invention. **Wei Zhang**, Lei Ji. Method, Device, Equipment and Storage Medium for Analyzing Bluetooth Communication Parameters [P]. PA21100822CN
- [18] Invention. **Wei Zhang**. A 3D Dynamic Displayer System, a Device and a Method [P]. CN112530432A,2021-03-19.
- [19] Invention. **Wei Zhang**. Full-color Display Array Control Circuit, Device and Light Cube [P]. (In Examination)
- [20] Xiaoying Deng, **Wei Zhang**, Xiaofeng Yang, Weifeng Chen. A Webcam Embedded with Real-time Environment Information [P]. CN209608763U, 2019-11-08.
- [21] Xiaofeng Yang, **Wei Zhang**, Xiaoying Deng, Weifeng Chen, et al. A Reading-aid Device for the Blind Based on Raspberry Pi [P]. CN209281692U, 2019-08-20.
- [22] Zijia Wang, **Wei Zhang**, Xiaofeng Yang, Wei Wang, et al. A System for All-purpose Campus Card United with Business Member Based on IOT and RFID Technology [P]. CN208722234U, 2019-04-09.

★ 9 Software Copyrights:

- [23] Industrial Control System Network Attack Chain Automatic Generation Platform (360 工控网络攻击链路自动生成平台) [CP]. Bo Ye, **Wei Zhang**, Jianqiang Qu. 2021SR1816116.
- [24] Industrial Control System Network Topology Drawing Platform (360 工控网络拓扑绘制平台) [CP]. Bo Ye, **Wei Zhang**,

Tian Long.2021SR1816115.

- [25] An Interactive AI System Software Featuring Dynamic Facial Expression Recognition and Voice Chatting[S]. **Wei Zhang**, Xiaoying Deng, Wanting Liu. 2019R11S0455591.
- [26] A System Software Used in a Bluetooth-controlled Car for Authentication Based on Dynamic Facial Recognition[S]. **Wei Zhang**, Fuzhou Shen, Xiaoying Deng, Lei CHEN. 2019R11S0455589.
- [27] An Eco-regulation System Based on Internet and Real-time Monitoring[S]. S Fan, J Sun, Fuzhou Shen, **Wei Zhang**,. 2019SR0619769.
- [28] A Smart Car System with Tracing and Photography Functions[S]. Fuzhou Shen, **Wei Zhang**, Saibo Fan, Lei Chen. 2019SR0676736.
- [29] A 3D Dynamic Display System Based on Intelligent Voice[S]. **Wei Zhang**, Fuzhou Shen, Ce Sun, et.al. 2019SR0223080.
- [30] A Robot Control System Server Based on WebServer Technology[S]. **Wei Zhang**, Xiaofeng Yang, Xiaoying Deng. 2018SR879516.
- [31] An Intelligent Rainbow Light System Software Based on Wi-Fi Module[S]. Shaowei Qian, X. Ge, **Wei Zhang**, et.al. 2018SR773134.

Research Experiences

GitHub Open Source: My research interests lie at Machine Learning and Computer Vision. 2017.09-present

- **Practicum4ECE**: Major Coursework Design Project (Ranking 1st in All Major Courses Design Projects) [[GitHub](#)] 2017.09-2019.12
- **SNE-RoadSeg2**: Available Free space Detection. PyTorch implementation of SNE-RoadSeg: Incorporating Surface Normal Information into Semantic Segmentation for Accurate Free space Detection. [[GitHub](#)]
- **StegaStamp-plus**. The project explores hiding data in images while maintaining perceptual similarity. Our contribution is the ability to extract the data after the encoded image (StegaStamp) has been printed and photographed with a camera (these steps introduce image corruptions). [[GitHub](#)]
- **Try-On by StyleGAN Interpolation Optimization**. Personal repository for "VOGUE: Try-On by StyleGAN Interpolation Optimization" (CVPR 2021), which is a StyleGAN interpolation optimization algorithm for photo-realistic try-on. SOTA results for garments to deform according to the given body shape, while preserving pattern and material details. [[GitHub](#)]

LightCube: A 3D Display System with Intelligent Voice Based on FPGA (National 2nd Prize) 2018.09-2019.05

- Surveyed the design and implementation of FPGA-based hardware accelerators under different platforms and network models over the past decade, and analyzed their differences, pros and cons.¹
- Designed a full-colored 12*12*12 LED cube array
- Designed cascade driver circuit with low power consumption, and used it to connect multiple ready-made LED cubes to make up an advanced LED cube dynamic display system
- **Evolutionary work: A Voice Robot Based on Emotion Analysis (National 2nd Prize)** [[GitHub](#)]²⁵ | [[Paper](#)]² | [[Slides](#)] | [[Patents](#)]^{18,19}

A Design of Indoor Self-navigating Meal Delivery Robot Based on Facial Recognition (Awarded as Excellent Project) 2018.05-2019.05

- Familiar with Raspberry Pi, and used it to recognize simple facial expressions based on statistics of face feature points (accuracy rate: 86.3%)
- Independently established LAN server based on Web Server³⁰ and realized robot's indoor self-navigation³
- A Smart Car System with Tracing and Photography Functions²⁸
- A System Used in a Bluetooth-controlled Car for Authentication Based on Dynamic Facial Recognition²⁶

Awards & Honors

- **National 2nd Prize**, the 2nd National University Contest on Intelligent Robotic Innovations. **Team Leader** 2019.05
- **National 2nd Prize**, 2018 National College Students' FPGA Innovation Design Competition. **Team Leader** 2018.12
- **National 3rd Prize, 1st Prize in East China**, 2019 "Discovery Cup" Software Design Competition of National College Students' "Internet Plus" Innovation Contest, National College Student Electronic Design Competition (Provincial **2nd Prize**) **Team Leader** 2019.04
- National Encouragement **Scholarship (5%)**; Fei Xiao-Tong **Scholarship** of Morality Cultivation (1/794) 2017.11&2018.11
- Great Title of "*New Youth for a Powerful Nation*" of National Summer Voluntary Teaching (selected among **300 people nationwide** by the Department of Schools of Central Committee of the Communist Youth League of China, China Youth Daily and people.cn) 2018.10
- **East China Region 2nd Prize**, National College Student Embedded Chip and System Design Competition and Smart Interconnect Innovation Competition 2019.10

Funding

Provincial College Students' Innovative Entrepreneurial Training Program, 2019.05 – 2020.05

- Yangzhou MAIWEI Information Technology Co., Ltd., No. 201911117138T, **Principal Investigator**

School-level College Students' Innovative Entrepreneurial Training 2018.05 – 2019.05

- A Design of Indoor Self-navigating Meal Delivery Robot Based on Facial Recognition, No. x20180186, **Principal Investigator**
- E-reading Aids for Visually Impaired People Based on Optical Character Recognition (OCR) and Text to Speech (TTS) Techniques, No. x20180186, **Participator**

Ability

- Be proficient in C/C++ programming language, have good coding habits, and master performance analysis and optimization skills.
- Familiar with common machine learning algorithms and frameworks, and have a solid mathematical foundation. Have experience in machine learning, deep learning algorithm projects, understand TensorFlow framework, CUDA programming.
- Familiar with Linux, QNX, RTOS systems, familiar with cross-platform cross-compilation of CMake, Bazel, GDB debugging, and the use of Profiling tools.
- Familiar with Python, Shell scripting, familiar with Docker containerization technology. Familiar with multi-threaded, high-concurrency programming, and familiar with common architectures and design patterns.
- Test-driven development, closed loop thinking. Proficient in GTEST unit testing, integration testing, and master DevOps technology.

Misc.

CSND Certified Blog Expert, Chinese Software Developer Network, the world's largest Chinese IT technology exchange platform 2021.04

- **TechBlogger**, focus on machine learning, computer vision
- Followers: **32 k+**

Maiwei AI Lab Builder, Open-Source Community, which focus on computer vision, link: <https://github.com/MaiweiAI> 2020.08 - present

Technical Blog Analyst, Global Affairs, Synced Technology 2020.08 - present

Vice-advisor, Ant Academic Study Center 2020.07 - present

Volunteer Experiences (OVER 400 hours of volunteer services) 2018.07 – 2020.06