# Wei ZHANG (Charmve)

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## Educational background

**Yangzhou University (YZU), School of Information Engineering (the Institution of AI)** **2016.09-2020.06**

- Bachelor of Science in Electronic Information Science & Technology, GPA: 82.5/100; Rank: 6/41, class of 2016
- Dual Degree in Business English, GPA: 80.76/100; Rank: 23/76, the second language: JLPT-N3:75
- Awards: Totally won **12** national and provincial awards, **28** municipal and school-level awards, **3** Funds

**Winter Academic Program at Nanjing University (NJU), School of Electronic Science and Engineering** **2019.01-2019.02**

- Being the only student who passed the selection in YZU ( Only 100 undergraduates were selected from Jiangsu Province)
- Orally reported the study of " Identification of Agricultural Diseases and Pests Based on Machine Vision" as a student representative
- Completed the Arm Smarter Connected(ASC) Course on AI Development held by Arm Education and IThing Edu

## 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*". Electronics World. (Preprint)

[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)$_2$ $MnCl_4 \cdot 2H_2O$. Royal Society Open Science. 7. 200271. 10.1098/rsos.200271.

## Patents and Copyrights

★ **FOUR Patents:**

**[**6] Innovation. **Wei Zhang**. A 3D Dynamic Displayer System, a Device and a Method [P] (in Examination)

[7] Innovation. **Wei Zhang**. Display array control circuit, device and light cube [P] (in Examination)

[8] Xiaoying Den, **Wei Zhang**, Xiaofeng Yang, Weifeng Chen. A Webcam Embedded with Real-time Environment Information [P]. **[1]** CN209608763U, 2019-11-08.

[9] Xiaofeng Yang, **Wei Zhang**, Xiaoying Deng, Weifeng Chen, et al. A Reading-aid Device for the Bling Based on Raspberry Pi [P]. CN209281692U, 2019-08-20.

[10] 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.

★ **SEVEN Granted Software Copyrights:**

[11] An Interactive AI System Software Featuring Dynamic Facial Expression Recognition and Voice Chatting[S]. **Wei Zhang**, Xiaoying Deng, Wanting Liu. 2019R11S0455591.

[12] 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.

[13] An Eco-regulation System Based on Internet and Real-time Monitoring[S]. S Fan, J Sun, Fuzhou Shen, **Wei Zhang**,. 2019SR0619769.

[14] A Smart Car System with Tracing and Photography Functions[S]. Fuzhou Shen, **Wei Zhang**, Saibo Fan, Lei Chen. 2019SR0676736.

[15] A 3D Dynamic Display System Based on Intelligent Voice[S]. **Wei Zhang**, Fuzhou Shen, Ce Sun, et.al. 2019SR0223080.

[16] A Robot Control System Server Based on WebServer Technology[S]. **Wei Zhang**, Xiaofeng Yang, Xiaoying Deng. 2018SR879516.

[17] An Intelligent Rainbow Light System Software Based on Wi-Fi Module[S]. Shaowei Qian, X. Ge, **Wei Zhang**, et.al. 2018SR773134.

## Awards & Honors

- **National 2nd Prize**, The 2nd National University Contest on Intelligent Robotic Innovations. 2018 National College Students' FPGA Innovation Design Competition. **Team Leader** 2019.05
- **National 3rd Prize**, **1st Prize in East China**, 2019 "Discovery Cup" Software Design Competition of National College Students'

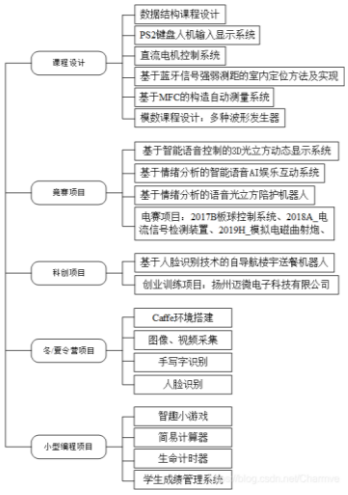
"Internet Plus" Innovation Contest, National College Student Electronic Design Competition **Team Leader** 2019.04

- National Encouragement **Scholarship** (**5%**); Fei Xiaotong **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

## Research Experiences

2017-2020.06

**Practicum4ECE: Major Coursework Design Project (Ranking First in All Major Courses Design projects) [GitHub]**



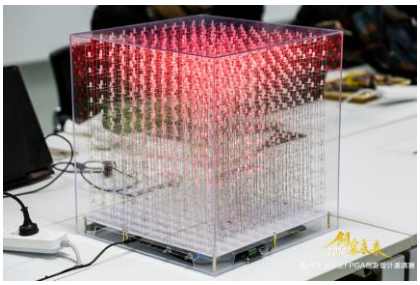

*Electronic Engineering Practice*: an indoor positioning method based on the combination of location fingerprints and least squares, the positioning accuracy up to 18.3cm

*Interface Technology*: built an automatic measurement system, used MFC host computer to conduct program control over signal generator and oscilloscope, realized the automatic measurement of the designated hybrid digital-analog circuits

**Open Source: My research interests lie at Computer Vision and Machine Learning.**

- Mirror & Glass Detection in Real-world Scenes [GitHub], Transparent-Object-Segmentation[GitHub]
- Surface-Defect-Detection [GitHub]
- Scene Text Detection and Recognition [GitHub]
- PyTorch implementation for Semantic Segmentation [GitHub]
- Awesome-Lane-Detection [GitHub]

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



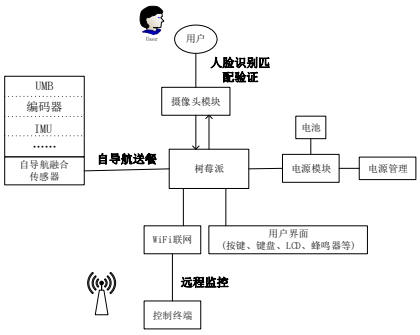
Summarized the design and implementation of FPGA-based hardware accelerators under different platforms and network models over the past decade, and analyzed their differences, pros and cons.[1]

Designed a full-colored 12*12*12 LED cube

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

**Related work: A Voice Robot Based on Emotion Analysis (National 2nd Prize) [GitHub]** [11] **[Code] | [Paper** [2]**] | [Slides] | [Patents]** [6,7]

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




Familiarized 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 Server [16] and realized robot's indoor self-navigation [3]

A Smart Car System with Tracing and Photography Functions [14]

A System Used in a Bluetooth-controlled Car for Authentication Based on Dynamic Facial Recognition [12]

A Webcam Embedded with Real-time Environment Information [8]

## Social Practice and Volunteer Experiences

**Technical Blog Analyst**, Global Affairs, Synced Technology 2020.08-now

**Vice-advisor**, Ant Academic Study Center 2020.07-now

**TecBloger**, domain in machine learning, computer vision [CSDN] | [Zhihu] 2020.07-now

**Volunteer Experiences (OVER 250 hours of volunteer services)**

- Won the honorary title of "Top100 Volunteer" initiated by *www.zggyw.org*, and got full membership of *International Association of Volunteers* Youth Action Committee 2018.11
- Volunteering for *The 19th Sports Games of Jiangsu*, as an assistant referees of the youth team of basketball games 2018.08
- *Yangzhou Jianzhen International Half Marathon*, **Outstanding volunteer** 2018.04&2019.04
- Responsible for the recruitment of volunteers in mainland China for *The 2019 World Summer Special Olympic Games*, Group leader