Zicong JIANG (蒋 子聪)

Gender: Male | Date of birth: 1999/04/15

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EDUCATION

Sep.2005 – Jun.2011 **Zhenhai Yingxingjiu Foreign Language Experimental Primary School**

Sep.2011 – Jun.2014 **Zhenhai District Ren'ai Middle School**

Sep.2014 – Jun.2017 **Zhenhai District Longsai Middle School**

Sep.2017 – Jun. 2021 **Northeast Electric Power University**

School of Information Engineering,

Major: Communication Engineering

GPA: 86/100, Ranking: 7/80

MAJOR COURSES

Circuit Analysis	88	Advanced Language Programming	91
Digital Signal Processing	96	Information Theory Foundation	92
Communication Principles	83	Electromagnetic Field and Transmission Theory	81
Analog Electronics	90	Microprocessor and Interface Technology	94
Signals and Systems	88	Communication Network Basics	87
Power Engineering Basics	96	Communication Electronic Circuit	83
Data Structure	91	Data Communications and Networks	86

RESEARCH EXPERIENCES

1. Radio Frequency Energy Harvesting System

School of Information Engineering, Northeast Electric Power University, CHINA

Advisor: Prof. Jianpo Li

- Design a multi-band, wide-band, high-gain microstrip antenna so that it can efficiently collect RF energy in the frequency band mainly at 915MHz or 2.4GHz, and design a matching circuit and voltage doubler rectification circuit which finally enables the system to be applied to low-power devices such as Zigbee.
- Research the application of metamaterials technology in antennas to achieve better performance while ensuring miniaturization, and use intelligent algorithms for antenna structure.

2. DeepLearning-based Transmission Line Detection System

School of Information Engineering, Northeast Electric Power University, CHINA

Advisor: Prof. Liquan Zhao

- Design a pair of smart glasses based on Raspberry Pi, which can realize the remote transmission of information (video, audio, text, photo, image and voice control), and real-time fault detection in the smart glasses terminal to give feedback for better maintenance.
- Improving the YOLOV4-tiny target detection algorithm such as proposing a new network structure or improving postprocess approach to have higher accuracy and high computational speed, and training my own training set before deploying it on Raspberry Pi for real-time transmission line fault detection
- Remote login to Alibaba Cloud server to build NodeJS server, and use STUN / TURN server to achieve NAP penetration of two devices in different network environments.
- Webrtc can be used to easily implement voice and video calls. The camera function uses the canvas command to intercept and draw the video in the video frame. Base64 encoding is used to encode the picture which is transmitted through p2p together with text.

3. Remote Environment Monitoring System Based on Qt and BeiDou Satellite

School of Information Engineering, Northeast Electric Power University, CHINA

Advisor: Prof. Jianpo Li

- Design a software that uses "BeiDou" data transparent transmission to realize the reading of various sensor data in remote environments through wireless transmission and real-time monitoring of the environment.
- Use QtCreator software for the development (Qt uses C++ for programming). Before using BeiDou transparent transmission, first realize the method of using RS485 bus to read data by wire, and then connect BeDou to realize BeiDou communication.
- On the basis of the RS485 bus, three different sensors can be read and recorded at one time, and the sensor to be read and the corresponding reading interval can be set separately. Then realize the function of automatically searching the port and configuring the device number. On the basis of realizing wired reading, use BeiDou transparent transmission to achieve short-range wireless data collection.

PROFESSIONAL SKILLS

Languages: English (TOEIC 800), Japanese (JLPT-N2 119)

Programming Software: Matlab, Pytorch, Qt Creator, Keil, Multisim, ADS, HFSS , Altium Designer

Programming Language: C, Python, C++, C#

Instruments: IOTA-1200 IoT analyzer, GDS-1104B oscilloscope, NI PXIe-1075, Raspberry Pi, STM32 / STC89C51 series microcontrollers

AWARDS & HONORS

2017 Second-class Scholarship of Northeast Electric Power University
2017 Third-class Award of National English Competition for College Students
2018 Innovation Third-class Scholarship of Northeast Electric Power University
2018 Second-class Scholarship of Northeast Electric Power University
2018 Third-class Award of "Changtong Cup" Electronic Design Competition
2019 Innovation First-class Scholarship of Northeast Electric Power University
2019 Championship of Jilin Provincial University Robot Competition
2019 Second-class Scholarship of Northeast Electric Power University
2019 Second-class Award of National Undergraduate Electronics Design Contest
2019 First-class Award of CHINA ROBOT COMPETITION 2019
2020 Second-class Award of Chinese undergraduate computer design contest in Jilin Province
2020 First-class Award of The "Challenge Cup" in Jilin Province

ACHIEVEMENTS

[1] Proceedinigs: **Zicong Jiang**, Liquan Zhao, Yanfei Jia. Design of transmission device inspection auxiliary management system based on raspberry pi. ICITEE-2019: Proceedings of the 2nd International Conference on Information Technologies and Electrical Engineering. December 2019 Article No.: 130 Pages 1–4. https://dx.doi.org/10.1145/3386415.3387077

[2] **Jiang Z,** Zhao L, Li S, et al. Real-time object detection method based on improved YOLOv4-tiny[J]. arXiv preprint arXiv:2011.04244, 2020.https://arxiv.org/abs/2011.04244?context=cs.CV

[3] Software Copyright Registration Certificate: Jianpo Li, **Zicong Jiang**, Yuxiang Gao. RS485-based Environmental Monitoring Information Management System. Registration No.: 2020SR0282369. Completion date: 2020-01-07.

ACTIVITIES

2018.9-2019.9 Hardware Department, Electric Practice Innovation Center, Northeast Electric Power University

- Organize and participate in various scientific and technological competitions at school and college level.
- Hold various courses to train lower grade students, introduce extracurricular knowledge related to electronics, including simple hands-on practices such as welding and designing a track car.

2018-Present Robot Studio of Northeast Electric Power University

- ✧ Research on various robot technologies, including biped robots, quadruped robots, drones, etc.
- ✧ Conduct self-study on machine vision and other knowledge, and participate in related competitions.