

Ziqi Zhang

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Education

Georgia Institute of Technology

Sep.2019

Master in Electronic and Information Engineering

Courses: ECE8843 Mathematical Foundations of Machine Learning, ECE6122 Advanced Programming Technology, CSE6140 Algorithms, CSE6242 Data and Visual Analysis

Beihang University(BUAA)

Sep.2015-Jul.2019

Bachelor of Engineering in Electronic and Information Engineering

Overall GPA: 3.76/4.0 Major GPA: 3.85/4.0

Columbia University

Jul.2018-Sep.2018

Visiting Student, Depart of Electrical Engineering

Standardization Examination:

GRE: 336/340(Verbel:166/170+Quantitative:170/170) + Analytical Writing:3.5/6

Research

Department of Electrical Engineering, Columbia University

The Comparison of HIO and GEC in Solving Phase Retrieval

Advisor: Prof. Xiaodong Wang

Jul.2018-Sep.2018

Wang's research group works on Statistical Signal Processing, Genomic Signal Processing, Bioinformation, Communication Theory, Wireless Communications, Optical Communication.

- Compared and analyzed the performances of the General Expectation Consistent (GEC) algorithm and the Hybrid Input Output (HIO) algorithm using MATLAB for phase retrieval
- Used the state evolution method to predict the performance of the GEC algorithm when the algorithm is used to reconstructed Complex Gaussian signal
- Proposed and proved the boundary of the weak convergence of GEC algorithm estimation under Complex Gaussian circumstance
- Acquired the ability of reading paper efficiently and writing paper using Latex and obtained a better understanding of the whole process of scientific research

Department of Electronic and Information Engineering, Beihang University

A Study of the Denoising Method of Magnetic Resonance Imaging

Advisor: Prof. Huaping Xu

Jan.2019-Jun.2019

Huaping Xu's research group works on SAR image processing, Biomedical image processing, Statistical Signal Processing.

- Conducted a survey on the noise property of MRI and the existing denoising methodology
- Finished the simulation of three different denoising algorithm BM3D, Wavelet filter and NLM
- Modified the algorithms according the noise property of MRI and existing paper.
- Built a denoising toolkit using MATLAB, and compared the denoising ability of those three algorithms

Internship

Institute of Automation, Chinese Academy of Science

State Key Laboratory of Management and Control for Complex Systems mainly focus on the technology of Optical Character Recognition.

Advisor: Prof. Chunheng Wang

Sep.2018-Dec.2018

- Conducted image processing projects including the detection, segmentation and recognition of characters using Python and OpenCV
- Implemented the image processing skills including denoising, edge detection and morphology processing into pragmatic projects and obtained a better understanding of Optical Character Recognition
- Improved Python programming skills and got familiar with the OpenCV library

Project Experience

OFDM Telecommunication based on AD9361 RF Transceiver

Advisor: Dr. Yuxi Zhang

- Completed the coding of transmitting part using Verilog and Matlab
- Implemented the method of analysis in digital circuit and digital signal processing
- Acquired the ability of coding the FPGA using Verilog and gained a better understanding of the whole process of WI-FI communication
- Built the OFDM telecommunication system based on IEEE802.11a standard and the hardware platform of ZYNQ and AD9361 transceiver

Design and Implementation of AM Transceiver

Advisor: Prof. Rongke Liu

- Took up the part of programming the stm32 (micro control unit) with C, consulted the datasheet of microchips, chose the suitable circuit and drew the RF-PCB using Altium Designer
- Designed the PCB based on Altium designer and simulation software of ADS
- Designed the transceiver based on prime LNA, AD835 multiplier, AD9361 AGC amplifier, weak signal envelop detector, ADF4351 phase-locked loop and stm32 as a central control unit

Remote Controlled Vehicle based on WI-FI

Advisor: Dr. Yuxi Zhang

- Wrote the program of the micro control unit by C on Arduino programming platform and built up the control circuit of the vehicle
- Realized the signal control by using the WI-FI as the media, the Arduino board as slave, and the smartphone as the host computer

Competitions

- Owned the Third Price of National Undergraduate Electronic Design Contest in 2017
- Owned the Second Price of BUAA Student Academic Scientific and Technological Works Competition in 2015
- Owned the First Price of BUAA Physics competition

Skills

- **Programming Language:** MATLAB, C++, Python, JavaScript and Verilog HDL
- **Software Tools:** Latex, ADS Simulation, Multisim Simulation, Altium Designer, Keil
- **Hardware:** 8051 micro control unit, STM32

Honors&Awards

- Outstanding Undergraduate in Beijing University of Aeronautics and Astronautics (Top 5%)
- Chinese Graduate Entrance Exam Waiver (Top 5%)
- Learning Merit Scholarship in Beijing University of Aeronautics and Astronautics (Top 10%)
- Scholarship for student excellent in Science and Technology competition (TOP15%)

Others

- Minister in school art club
- **Personal Hobbies:** Welding circuit, Drawing, Running, Basketball