Xu, Peijie

Chongqing University, Chongqing, P.R. China
E-mail: 20175238@cqu.edu.cn
IEEE Student Member

EDUCATION

Chongqing University (CQU) **Chongqing, China**
Bachelor of Engineering *Sept. 2017 ~ Jun. 2021 (expected)*
Electrical Engineering and Automation (Major) | Integrated Circuits (Minor)

- **GPA:** 3.67 / 4.0; **WES iGPA**: 3.80 / 4.0; **Average Score:** 88.18 / 100

RESEARCH & TRAINING EXPERIENCE

Microgrid Laboratory (belongs to State Key Laboratory) **CQU**
Research Intern | Advisor: Prof. CHEN, Minyou *Jan. 2020 ~ Present*

- Investigated control methods for a Multi-Agent system and methods of energy management for a smart home
- Design and simulate an algorithm using Deep Reinforcement Learning to minimize energy cost for a smart home in the absence of the thermal dynamics model
- Designed and simulated an algorithm using MATLAB to implement consensus control for output power regulation of doubly fed induction generators (DFIGs) based wind turbines (WTs) with on-site battery energy storage systems (BESSs)
- Achieved distributed consensus for output power regulation of 10 DFIGs with BESSs

Electrical Compensation Technology for Visible Light Communication (VLC) **CQU**
Technical Leader | Advisor: Prof. LUO, Quanming *Mar. 2019 ~ Dec. 2020*
Funded by: National Science and Technology Innovation Training Program for College Students

- Investigated into the compensation technology for the electrical index deterioration of VLC
- Structured the VLC system; designed and made the data sending and receiving platform on Printed Circuit Boards (PCB); proposed and analyzed a waveform compensation method of a VLC driver; simulated the proposed method in PSIM
- Extended communication distance of VLC system whose LED worked as a scattering light source by 200%; wrote 1 design document of the VLC system; drafted 1 paper about proposed compensation method

Digital Oscilloscope Implementation and Real-Time Signal Processing **CQU**
Team Leader | Advisor: Prof. MAO, Yuxing *Nov. 2020 ~ Dec. 2020*
Software Platform: Code Composer Studio 9 (CCS) | Lines of Code: 1801 | Language: C

- Achieved an oscilloscope based on a TMS320F28335 DSP development kit and an LCD screen
- Sampled voltage of signal using the ADC in the DSP; analyzed frequency components of the signal using 128 points FFT; stabilized the waveform in rising edge, high level or low level mode; implemented a Finite Impulse Response (FIR) filter on the digital signal using circular convolution
- Speeded up refresh rate of the LCD by 300%; decreased delay time to 10% when transmitting data in the bottom layer software

Android Application Development **CQU**
Advisor: Prof. YANG, Ruilong *Sept. 2020 ~ Dec. 2020*
Software Platform: Android Studio | Language: Java

- Independently developed 4 APPs: Oral Calculation Tester (860 lines), Student Information Manager (990 lines), 24 Game with Poker(1160 lines), and Vocabulary Helper (1310 lines)
- Designed the user interface for APPs; developed management systems using database (SQLite) and third-party APIs

Motor Vector Control System Design and Analysis **CQU**
Advisor: Prof. WANG, Mingyu *May 2020 ~ Jun. 2020*

- Independently built an Indirect Rotor Flux Oriented control system for an induction motor (IM)
- Formulated a model of IM in a stationary reference frame ($\alpha\beta$ frame) by taking rotate speed, stator current and rotor flux as state variables; designed and simulated a motor control system in SIMULINK based on above model with no static difference between given and output; analyzed and concluded the suitable domain of parameters of PID according to the given IM

Brushless DC Motor (BLDC) Control System Design **CQU**
Team Leader *Mar. 2020 ~ Jul. 2020*
Software Platform: CCS & Altium Designer | Language: C

- Designed and made a BLDC system including a drive system on PCB and DSP control system.
- Designed the motor drive module and regulated motor speed with PID control.

Digital Clock Design **CQU**
Team leader | Advisor: Prof. XIONG, Lan *May. 2018*
Software Platform: Vivado 2017.4 | Lines of Code: 590 | Language: Verilog HDL

- Achieved a digital clock base on Xilinx Artix-7 FPGA (XC7A35T-1CSG324C)
- Structured, coded and debugged the source and constrain files for the FPGA development kit

INTERNSHIP EXPERIENCE

ABB **Chongqing, China**
Intern | Software Platform: RobotStudio 2019 *Jul. 2020*

- Designed a versatile robot application based on a collaborative robot (IRB 14050 Yumi) which expedited the speed of queuing by 20%, reduced direct human contact and prevented the transmission of the virus

HONORS & AWARDS

First Prize of Chinese Mathematics Competitions for College Students *Sept. 2018*
Successful Participant Prize of Mathematical Contest in Modeling *Apr. 2019*
Contest Paper: A Disaster Response System for Puerto Rico: Based on A Mathematical Model
Excellent Prize of Mathematical Contest in Modeling of Chongqing University *Dec. 2018*
Contest Paper: An Analysis of Terrorist Events in China and the United States
Third Prize of Mathematics Competitions of Chongqing University *Jul. 2018*
Third Class Chongqing University Scholarship *May 2018*

SKILLS & INTERESTS

Language: Native speaker of Mandarin, TOFEL (R/L/S/W: 30/28/23/22)
Programming Language: C, Java, MATLAB, Verilog HDL, Assembly Language
Mastered Software: CCS, Altium Designer, SIMULINK, PSIM, Android Studio, Multisim
Familiar Software: RobotStudio, Cadence Virtuoso
Mastered Micro-Controller: DSP, FPGA
Interests: Soccer, Swimming, Middle-distance running, Indoor arrangement