**Shaoyu(Robbie) Zhu**

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**SUMMARY**

* Background in embedded systems, Android apps development, data mining, along with machine learning
* Project experience in digital signal processing
* Course experience on CAN communication and operating system (Unix and Linux about bootloader, kernel etc.)
* 5+ years’ programming experience in C, Java, MATLAB and VHDL
* Experience in using C++, PHP, Simulink, and JavaScript

**EDUCATION**

**Master of Science in Engineering,** **University of Michigan-Dearborn, Dearborn, MI** April 2016

Major: Electrical Engineering GPA: 4.0/4.0

**Bachelor of Science, Chongqing University of Posts and Telecommunications, Chongqing, China** June 2013

Major: Electronic Information Engineering GPA: 3.5/4.0

**PROFESSIONAL EXPERIENCE**

**The University of Michigan-Dearborn Intelligent System Lab Dearborn, MI**

**Research Assistant** May 2015-present

* Developed two Android Applications in Java and Android SDK on Android Studio for drivers’ activities recording by voice recognition, wire button control and touch screen.
* Designed Android user interfaces (UI) in XML on both mobile phone and tablet devices.
* Transferred recorded data from Android device to Internet database in Java and PHP through Wi-Fi connection to improve the drivers’ activities data organization.
* Designed a Kalman Filter algorithm in MATLAB to reduce the 90% of GPS error, which improved the accuracy of the vehicle collision warning system.
* Designed mathematical algorithm in MATLAB to select out 4 better physiological signals and OBD signals to build up neural network for classifying and predicting driver activities. (funded by Ford Motor Company)
* Designed vehicle collision warning algorithm and intelligent system through analyzing and summarizing 30 GB of vehicle to vehicle (V2V) communication signal data in MATLAB.

**University of Michigan-Dearborn Dearborn, MI**

**Teaching Assistant for Advanced Software Techniques in Computer Engineering (C++)**Jan 2015-Apr 2015

* Assisted students in developing advanced concepts and techniques of modular object oriented and structured programming (C++).

**Zhangzhou Xinli Computer Cooperation Zhangzhou, China**

**Intern Engineer** July 2012-Sep 2012

* Assisted engineers for network cabling, building LANs for customers and help them with relevant problem.

**PROJECTS**

**Design and Simulation of Anti-Lock Braking System (ABS system) (MATLAB, Simulink, DFMEA)**

* Simulated and researched Anti-Lock Braking System which decreases 40% of braking distance on Simulink.
* Used DFMEA to analyze the potential failure mode, potential effect of failure and other parts of the ABS system.

**Floppy Disk Control System (MATLAB, Simulink)**

* Designed the state and output feedback, and observer to reduce the vibration of disk head movement on system.
* Tune PID based control for improving stability of disk read/write head on Simulink.

**Digital Signal Processing---Digital Audio Effect Simulation (MATLAB, Simulink)**

* Designed a system in Simulink and MATLAB to improve audio effects such as echo, chorus, and reverberating by changing the audio in different frequencies range.
* Changed the speed of audio by using MATLAB script program.

**Embedded Infrared Remote Controller (C, Microcontroller/Microprocessor, KEIL)**

* Developed an IR remote controller through writing and debugging embedded C code on microcontroller (AT89C51).
* Received and sent 38kHz infrared control signal of remoter through serial data communication.

**Embedded Basketball Scoring System (C, Microcontroller/Microprocessor, PROTEUS, KEIL)**

* Designed and simulated the circuit of basketball scoring system on PROTEUS.
* Used software development life cycle to design and program software part of the system in C on Microcontroller.

**iTunes User Interface Design (Java, JSON, Eclipse)**

* Designed GUI in Java on Eclipse to make users interact with iTunes easier.
* Used JSON to achieve the data transmission between GUI and iTunes database.

**The Design of Digital Electronic Clock (****FPGA, VHDL, Quartus II)**

* Designed digital electronic clock for displaying time and time alarm based on FPGA design using VHDL on QuartusII.

**SKILL**

**Hardware:** Embedded MCU; FPGA(VHDL/Verilog)

**Software:** C/C++, VHDL, Matlab/Simulink, Java, PHP, JavaScript, JSON, HTML, CSS, SQL

**Tools:** KEIL, Quartus II, Android Studio, Eclipse, PROTEUS, Microsoft Office Suit, PostgreSQL, Brackets

**HONORS & AWARDS**

National Scholarship awarded By the Ministry of Education of the People's Republic of China Nov 2012

1st place National Mathematical Contest in Modeling Oct 2011