

My research interests include a host of fields, such as wireless communication, digital system, coding theory, computer networking, operating system, robotics and AI. I have been dreaming of becoming an outstanding engineer or a prominent scientist since my childhood. After I went to the college and started to accept some basic education on electrical engineering and computer science, the desire became overwhelmingly strong. However, due to the limit of my vision, I am still ignorant about the thrilling changes that are happening at the edge of the academic community. I want to accept some rigorous scientific trainings and push outward the boundaries of the scientific kingdom.

Throughout my undergraduate and graduate career, I had done quite a few engineering projects. My bachelor thesis project is about a ground control program used for controlling the orientation of a high-altitude balloon-borne gondola and monitoring its ambient condition. The program was written in LabVIEW. Through reading the packets transmitted back to the ground by the telemeter, it can monitor some parameters of the balloon-borne gondola, such as attitude, position, altitude, velocity, acceleration etc. By displaying these parameters in numeric or waveform format, the condition of the gondola is demonstrated in a more straightforward manner, which helps the experimenting crew a lot. The program can also log the flight data of the high-altitude balloon so that the researchers can extract it from the flash and replay the flight trajectory of the balloon after the experimental equipment is recycled.

My master thesis project is about a flight control computer used for controlling a solar-powered UAV. I completed the whole process of hardware design and also wrote part of the software. The hardware is composed of a DSP SOC TMS320C6748, a FPGA chip XC4VLX40, DDR, NAND Flash, SPI Flash, etc. After I finished the PCB layout and made a prototype circuit board, I wrote the drivers for each peripheral, including NAND Flash, SPI Flash, etc. To add more UART and SPI interfaces, I also wrote a UART IP core by referring to the design of 16550, a classical UART chip, and a SPI IP core.

In the last year of my postgraduate career, I conducted an internship in Qualcomm. I started off with reading MAC, RLC and PDCP layer specifications(TS36.321, TS36.322, TS36.323) in detail. Then I read some code regarding these layers and learned how to implement them in engineering. After I had a general sense of MAC, RLC and PDCP protocols, I began to learn how to analyze the log and fix issues. Finally, after I got my master's degree, I joined Qualcomm formally and became a Modem software engineer. My job responsibility is to join Qualcomm chipset off target implementation and debug from L2(MAC, RLC, PDCP layers) perspective. I also provided technical support and solutions for issues reported from testing teams and customers. In the coming months, I will participate in Qualcomm 5G NR/LTE modem L2 software design and implementation.

My undergraduate and postgraduate career, plus my internship and work experience,

have laid me a solid theoretical foundation and widen my horizon on electrical and computer engineering field. I have basic knowledge of computer networks, wireless communication, operating system, VLSI and so forth. I have also mastered a variety of engineering skills such as C, C++, PCB layout, ARM, FPGA, etc. This breadth of knowledge makes me well prepared for Ph.D. study and might be conducive to my future research,

I enjoy tackling interdisciplinary technology challenges that entail hardware, software and algorithm. In addition, I also hope to learn AI and its application in control system, VLSI. And I cannot wait to devote myself to the cause of science.