WENYI FU

E-Mail: wf223@cornell.edu Tel: (+1) (657) 397-2033 LinkedIn: linkedin.com/in/wenyi-fu-b326442ab

EDUCATIONS

Cornell University *Sept. 2023 – Expected Dec. 2024*

M.Eng. in Electrical and Computer Engineering

- **Relevant courses:** Digital Systems Design Using Microcontrollers, Design with Embedded Operating Systems, Computer Architecture, FPGA Design and SoC, Introduction to Digital (VLSI) Design, Fast Robots

Beijing Jiaotong University & Lancaster University *Sept. 2019 – Jun. 2023*

B.Eng. in Communication Engineering & B.Eng. in Electronics and Communications Engineering

- **Relevant courses:** Signals and Systems, Digital Signal Processing, Computer and Control, Digital Electronics, Integrated Circuit Engineering, Advanced AC Circuits, Analog Circuits, Telecommunications, etc.

SKILLS & INTERESTS

Programming: C/C++, Python, Verilog, Shell Script, HTML, Assembly, MATLAB, GitHub
Skills: Microcontroller and PCB Design, FPGA Design, Soldering, Sensor module design, Wireless technology
Software: Arduino IDE, VSCode, MATLAB, Quartus, ModelSim, Simulink, AutoCAD, Inventor, Multisim
Operating System: Linux, Windows, MacOS

RELEVENT EXPERIENCES

Baby Safe Alarm System *Sept. 2023-Present*

Design Project, Cornell University, under the supervision of Professor Joseph Skovira

- Small tags preventing babies from high temperature and keeping them in parental sights through alerts; Implementation of modules and sensors, including DHT temperature sensor, vibration motors, buzzers.
- Embedded system programing on microprocessor ESP32 by using Arduino IDE; Bluetooth communication implemented between Baby Tag and Key Fob; Synchronized deep sleep mode to save battery power; Design PCB to make the device more portable saving power and reducing size; Serial port for uploading code and debugging.
- Later development will be focusing on PCB size shrinking, software improvement and test of batteries.

Mandelbrot Set Visualizer on DE1-SoC FPGA *Feb.-Mar. 2024*

Course Project, Cornell University, FPGA Design and SoC

- Computation and rendering of the Mandelbrot Set on a 640x480 VGA display where each pixel representing a point on the complex plane; Color determined by the number of iterations; Implementing 4x4 parallel iterators to reduce rendering time; Physical buttons on FPGA for zooming and panning.
- Design a C program user interface on the ARM side to display current region and rendering time as well as to customize max iterations.

Remote-controlled Robot with Electromagnet *Oct.-Dec. 2023*

Course Final Project, Digital Systems Design Using Microcontrollers

- Robotic car controlled by keyboard through Wi-Fi sending UDP packets; Embedded system implemented on the microcontroller, Pico W, RP2040.
- Remote-control port opened on the laptop by Python to send controlling characters; Designed motor drive module and electromagnet drive circuits; Serial port for uploading code and debugging.

Voice Changer Based on Raspberry Pi 4 *Oct.-Dec. 2023*

Course Final Project, Design with Embedded Operating Systems

- Voice transformer tuned input voice data with special sound effects through Python and Linux operating system on Raspberry Pi 4 with the modules of PiTFT Touch Screen, USB microphone and speakers.
- Applying SciPy library for FFT transformation algorithm, PyAudio library to output the modified voice and FIFO files to send tuning parameters between two program files.

Intelligent Line-tracking Robotic Vehicle Design *Apr.-Jun. 2022*

Design Project, Beijing Jiaotong University

- Robotic car tracking black lines, avoiding obstacles and detecting colors to deliver objects, using Arduino Mega 2560; PCB design, PID control algorithm implemented; Serial port for uploading code and debugging.
- Participated as the team leader and responsible for PCB design, soldering and software design.