Leo Yan

(Jan 2020) First year Electrical Engineering undergraduate at UCSB

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RustColeone

EDUCATION

- 1ST YEAR **BS Electrical Engineering** – University of California Santa Barbara – 2019-2023

  Relevant modules & coursework (able to provide code upon request):

  - Intro to ECE (C++)
    - Using Arduino for problem solving and project buildings in C++.
      - Digital to analog converter, using R2R Ladder
      - Experimented with different components and sensors
      - Built individual project – **Arduino Gaming Console** ()
  - Signal Processing (Python)
    - Learned basics to Signal Processing and applied knowledge with Python.
      - Applied Fourier Transform to different signals to analyze them.
      - FIR Filters to smoothen images in lab.
      - Shannon's theories.
  - Computer Science (C++)
    - Programming guidelines and basics
    - Modern tools for software developments in C++

- **A-Level** – (Shenzhen, China) Nanshan Chinese International College – 2017-2019

  Further Math, Math, Physics and Chemistry – A*/A /A*/A /

SKILLS

- Languages: Java, C++, C#, Python, Verilog, LaTeX
  - Currently learning C++ and Python
  - Has experience developing in Quartus
  - This documents and the notes I took in class are written in LaTeX
- Circuit Board Designs
  - Familiar with developing Circuit Boards with PADs
- Web development
  - Worked with web developers in Tencent as an intern.
- Game development
  - Building and designing games with Unity

PERSONAL PROJECTS

- **Arduino Debugger** (): Single Step Arduino Debugging made cheap and affordable – 2018 to date.
  - PC and Arduino communicate through serial communication
  - HID, bluetooth and WiFi to be supported in the future
  - PC side runs library identical to Arduino but sents an command instead of executing
  - Arduino is programmed to translate the command into corresponding code and execute it
- **Arduino Remote Display** (): Remotelly update display with MQTT protocol – Oct 2019 to date
  - Translates an image file with C# desktop application and sent using MQTT
  - Arduino receives and output the images to the epaper display
  - More display to be supported in the future
  - A test for adding wireless step by step debug function to Arduino Debugger
- **GameBoy-Pi** (): Gameboy built with Arduino – 2018
  - Circuit designed by me and manufactured by JLCPCB
  - Based on a Raspberry Pi 3B running Retro Pie

  - Bought the gameboy case, screen and other components online

- **Arduino Calculator** ( ): Arduino Calculator(Portable CLI) – 2017
  - The Arduino communicates with the Rasbberry Pi zero, and acts as a keyboard and display.
  - The display copy and outputs the CLI from the PI Zero.

- **LED Emoji Goggle** ( ): Inspired by Wrench (Watch Dogs 2) – 2017-2018
  - An goggle with LED Matrix built on to it
  - LED controlled by CMOS 164 shift register IC
  - Remotelly controlled with HC-05 bluetooth module and Arduino
  - Video Demonstration at

OTHER INTERESTS

- Interested in animation and some arts;
- Been playing Piano for a long time;
- Video Editing
  - High School Graduation Video ;
  - Sharing the process of how I make my projects.
  - Videos to teach my audience something interesting.
  - The music I written will also be posted.
  - All my videos are uploaded to bilibili