

龚炜棋 Martin

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Education

University of Southern California, Los Angeles, CA 2023 – Present
B.S. in Physics, B.S. in Computer Science Games GPA: 3.93
Deerfield Academy, Deerfield, MA 2019 – 2023
High School Diploma with High Honors/Excellence in Computer Science GPA: 3.85

Coursework

Linear Algebra, Differential Equations, Multi-Variable Calculus, Mechanics, Electromagnetism, Data Structures & Algorithms.

Skills

Coding: C++, Python, Java, Verilog, PHP, HTML, CSS, TypeScript, JavaScript, Arduino, Handlebars
Tech/Env: L^AT_EX, Shell, Git, Makefile, TensorFlow, PyGame, Matplotlib, React, Node.js, Windows, Linux, macOS
Software: Adobe Suite, AutoCAD, Mathematica, SolidWorks, KiCAD
Languages: Chinese(Fluent), English(Fluent), Spanish(Basic), Japanese(Basic)

Experience

EZfun Interactive Technology Ltd., Shenzhen, China Jun – Aug 2023
Student Intern

- Created and optimize the Localization of the English mobile version of *Dynasty Warriors*
- Optimized in-game audio and fine-tuned game mechanics in Unity for WeChat minigame.

Kaggle, Online Jul 2022 – Jun 2023
Contestant

- Group participation in training and testing computer vision model (CNN) using TensorFlow.

First Tech Challenge, Deerfield, MA Aug 2018 – Apr 2023
Team Leader; Mechanical Design and Robot Programming

- Visual pattern and object recognition and autonomous robot operation logic in Java using OpenCV and TensorFlow Lite.
- Mechanical design of task specific retrieval/placement mechanisms and wheeled chasis.
- CAD modeling of robot design in SolidWorks with custom and standard parts.

Projects

Website and Web Service – Personal website and API maintenance 2019 – Present

- Build and maintain websites using PHP, React, Bootstrap, and Nginx. Maintain blog using Ghost CMS.
- Build custom APIs using node.js to cache/serve testing applications and learning projects.
- Route and maintain proxied servers for computer games using openVPN.

Geiger Counter – Geiger counter based on FPGA. Spring 2023

- Program FPGA to handle analog rising edges of the Geiger tube.
- Concurrent control of different devices (buzzer) with single clock
- Design and optimization of high-voltage circuits

Analysis of Soft-Tip Mechanical Fingers – Statistical analysis of the effectiveness for each. Summer 2022

- Statistical/mathematical modeling of kinematics of mechanical fingers using python and demonstrated with matplotlib.

- CAD designing of experimentation apparatus with interchangeable mechanical tips. Manufacture apparatus through 3D printing and laser cutting.

Eye Tracking Page Flipper – Page flipping for disabled/performers

Summer 2021

- Utilize OpenCV to track and locate relative position of the iris with edge detection and center of mass algorithms
- Physical modeling and design of pressure based page flipping device for physical pages