Aiden Seo

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WORK EXPERIENCE

Software Engineer Intern *Sept. 2022 – May 2023*

WEX INC.

- Utilized Gherkin and Python to create automated test cases for both frontend UI and backend API of various services
- Implemented the backend test cases for the entire service that is newly created by DevOps
- Ran Kafka tests with ADO personalized access token and aiven access to ensure the reliability of data pipeline
- Used agile technique to reduce technical debt, improve customer satisfaction and deliver a higher quality product
- Participated in Agile using Azure DevOps, and daily attended at least 2 work meetings on projects
- Wrote documentation on QA progress for DevOps team

Research Intern *Feb. 2023 – May 2023*

Alzheimer Disease Research Center

- Utilized decoding algorithms with machine learning technique to measure the speed and position of eyes from the brain activity using Python, Jupyter Notebook, and TensorFlow
- Provided a better understanding in the correlation between the brain activity and the eye movement
- Created efficiency table by using different number of nodes giving to decoder, measuring their performances

Undergraduate Teaching Assistant *Jan. 2023 – April 2023*

University of Pittsburgh

- Worked as an undergraduate teaching assistant for C++ Embedded Processors & Interfacing course, teaching C++ and Assembly
- Resolved numerous software/hardware issues related to the lab, wrote documentations on how to resolve them
- Held office hours and the lab session consists of 100+ undergraduate students, ensured that all students are following the curriculum

Research Assistant *May 2022 – Oct. 2022*

University of Pittsburgh Swanson School of Engineering

- Utilized OpenMV, Python, and TensorFlow to create an object detector that can be deployed to low-powered micro-circuit devices with camera attached
- Aimed to run machine learning model under the most extreme conditions with insufficient energy
- Tested wireless charging technique to provide current to the device and continuously run the object detector

PROJECTS

Blog Web Application *April 2023*

- Used ASP .NET Core 7.0, Microsoft SQL Studio, C#, bootstrap, HTML, CSS, and JavaScript to design a blog web application service connected to a local database
- Users have different access levels, and only admins and superadmin can make changes to the application by adding new tags and blog posts, editing existing blog posts, searching specific blog posts with tags, adding comments, and editing the existing user account.
- Actively used MS SQL database to store/retrieve data. All the blog posts and user data are managed by the database

Arcade Cabinet Bop-It Project *March 2023*

- Used ATmega328p microcontroller to design a bop-it toy with arcade theme
- Worked as a team of 3, actively practiced Agile using JIRA and GitHub to manage the code
- Burned the bootloader, uploaded the C++ code directly to the microcontroller chip using Arduino IDE
- Designed the schematic and PCB using Altium Designer, and the enclosure using black acrylic with laser cutter
- Takes the joystick, buttons, and coin inputs from the user and display the result through the LCD display

Pipelined 32-bit CPU *December 2022*

- Designed fully functional MIPS 32-bit CPU internal system using VHDL
- Used finite state machine, block diagram, and to create cycle-efficient CPU control unit
- Total of 21 MIPS assembly operations are available
- Confirmed reliability with tcl and C testbenches

EDUCATION

University of Pittsburgh – Pittsburgh, Pennsylvania — Expected May 2024
Bachelors of Science — Overall GPA: 3.4 / 4.0
Major: Computer Engineering — In-major GPA: 3.6 / 4.0

EXTRA CURRICULAR ACTIVITIES

Sailboat Project — *Sept. 2021 ~ Feb. 2022*
Sailboat Club — University of Pittsburgh

- Designed the automatous system that can sail towards the destination with its current location received from GPS service
- Programmed the Zigzag pattern to stabilize and fasten up the speed of the boat
- Utilized Python and Arduino to create the system and control the movement of the boat

COVID Simulations in Real World — *Jan. 2021 ~ April 2021*
Freshmen Engineering Conference — University of Pittsburgh

- Researched on how the spread and death rates of COVID in U.S. can be predicted using simulation generated with SEIR model
- Implemented SEIR model using Python, confirmed its reliability by comparing the predicted results with the actual
- As a team leader, monitored teammates' contributions to the research to maximize the productivity within the given time
- Presented the efficiency and accuracy of simulation at the conference

Auto Indy Car Project — *Sept. 2020 ~ Dec. 2020*
Robotics and Automation Society (RAS) — University of Pittsburgh

- Contributed to the creation of autonomous race car by reading signals from sensors attached to the vehicle and deciding the next movement of the wheel accordingly using Python
- As a part of controls team, peer-reviewed other member's code and make sure that it is safe to be added to the system
- Actively used GitHub to manage the code that goes into the system

TECHNICAL SKILLS

- Python
- Java
- C
- C++
- C#
- HTML
- CSS
- JavaScript
- MATLAB
- TensorFlow
- Gherkin
- Docker
- MIPS
- Linux
- Git
- ASP .NET Core 7.0
- Unity
- vim
- VMWare
- Jupyter Notebook