Tyler Chen

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Technical Skills

Languages: Python, C/C++, C#, JavaScript, HTML/CSS
Frameworks: Node.js, Flask, WordPress Plugins, Django
Developer Tools: Git, Github, Google Cloud, Asana, Vim, Linux, Make, AWS, Fusion360, MongoDB
Libraries: Arduino, Raspberry Pi, PIL, SDL2, OpenCV, Numpy, TKinter, Box2D
Algorithms/Data Structures: Hashmap, Graph Search, Trees, Dynamic Programming, Segment Tree, Bipartite Colorings

Experience

Web Development Intern | *PHP, CSS, HTML, JS, Cypress, Python, SQL* July 2021 – September 2023
PixelPAD.io *Vancouver, BC*

- Used **PHP, HTML/CSS, PixiJS, and Javascript** to develop features for an online Python game engine
- Created a multiplayer library that allowed for creation of multiplayer games by translating calls from Python to Socket.IO - games created using this library reached over **10000+** plays
- Deployed builds to testing and production servers with **Amazon EC2** and **DigitalOcean**
- Created digital game asset marketplace that allowed for easy sharing of game assets and scripts, saving storage and reaching **1000+** total asset downloads
- Created engine tests using CypressJS, reaching **70%** coverage and helping with developer workflow
- Used **ChatGPT's** restful API and prompt engineering to create an **AI-powered chatbot** that could assist users with programming games, implementing websocket-based message streaming
- Used **Figma** blueprints and **Bootstrap 5** to create a website for a Coding League sponsored by **Simon Fraser University** with over **100+** registered schools

Coding Instructor | *Python* Mar. 2022 – Aug. 2023
Under The Gui Academy Inc. *Vancouver, BC*

- Designed and programmed games using Python that served as the base for a coding curriculum for kids, helping over **300+** students - and counting!
- Used tools such as Python, TinkerCAD, VEX robotics platform to teach kids STEM-related topics with hands on workshops

Projects

Shower Scribe | *Python, Flask, Raspberry Pi, Cohere API, Bootstrap* October 2023 – December 2023

- Created an **LLM-powered IOT** device for recording shower thoughts
- Indexed shower thoughts into a vector database, enabling users to search their thoughts via LLM-powered **semantic search**
- Used **AI voice transcription** to extract text while ignoring background noise from the shower
- Used **Flask** to serve a locally hosted website that allows users to view and listen to their previous shower thoughts
- Leveraged python **multiprocessing** and **threading** to tie multiple processes together simultaneously on the Raspberry Pi

Cansat Satellite | *Python, C++, Arduino, Fusion 360, Circuits, RC* November 2022 – March 2023

- Created a mock satellite capable of telemetry data collection and long range communication within **10 kilometers** for a Canadian hardware design competition
- Programmed an Arduino with **C++** to link several sensors such as a GPS, barometric sensor, gyroscope, and **long range** radio antenna
- Linked hardware using several communication protocols such as I2C, SPI, UART, NMEA, AT commands
- Designed custom PCB using Fusion360 to solder all the components to
- Created and printed 3D model using TinkerCAD

Nautical Twilight | *Python* March 2020

- Won a game jam with over **200+** contestants, leading a team of 4 to design and program a game within 2 weeks
- Created underwater exploration RPG with realistic physics, particle systems, and bossfights
- Implemented unique underwater-themed powers such as echolocation and speed boosts
- Used lazy rendering to optimize game for low-end devices - our game reached over **15000** plays

Education

University of Waterloo | *Cumulative GPA: 4.0* Sep. 2023 – Present

- Bachelor of Sofftware Engineering