Justin Lau

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Technical Skills

Languages: JavaScript, Python, HTML/CSS, C#, C/C++
Libraries/Frameworks: React, Next, ASP.NET Core, Node.js, Express.js
Developer Tools: Git, MySQL, MongoDB, Azure, GCP, Firebase, Figma, Postman, Vercel, Netlify

Experience

Software Developer Intern May 2023 — Aug. 2023
BCS Automation *Belleville, ON*

- Engineered the backend of a VR platform to enable ship scenario simulations using **digital twin technology**
- Developed a scalable REST API using ASP.NET Core Web API, covering **20+** endpoints and using CRUD operations for real-time data processing from MySQL databases
- Architected ASP.NET servers to process raw signals using ship system logic, boosting simulation accuracy by **25%**
- Designed MySQL queries on Azure to facilitate storage from **5300+** sensors, enhancing data accessibility
- Implemented plugins to provide apps with utility functions for HTTP requests and automated 3D simulations

Software Developer Intern Jun. 2021 — Aug. 2021
HealthSmart Technologies *Toronto, ON*

- Developed an EMR integration website, providing health data access for patients and doctors
- Built 3D patient visualization pages with Three.js and Blender for real-time browser rendering
- Converted Figma mockups into dynamic React webpages, enhancing foot traffic by **33%**

President of Web Development Jul. 2023 — Present
McMaster University Buddies For Brain Injuries Association *Hamilton, ON*

- Leading a team of 5 developers in revamping the organization's website using React.js, Three.js, Next.js, and Node.js, resulting in **50+** new members and **3+** major neuroscience sponsors

Game Software Developer Nov. 2021 — Aug. 2022
Legion Studios *Mississauga, ON*

- Led the development of multiplayer games, amassing **12,000 followers**, **100,000 plays**, and **1000+ sales**
- Improved menu designs, animations, and storyline elements, boosting average daily plays by **30%**
- Optimized frame rate performance by **50%** by implementing scalable Lua libraries for game systems

Projects

ReadRight — Dyslexia Reading Aid | *React, Express, Node, ChakraUI, Firebase, GCP, Cohere API*

- Constructed a reading aid site with AI-generated prompts and voice analysis using React for the frontend & Cohere's LLM API for the prompts, achieving **97%** accuracy in analyzing user reading proficiency
- Implemented Firebase for realtime user authentication & added dynamic login messages with ChakraUI
- Integrated Google Cloud's speech-to-text API via REST endpoints in Express, enabling reading accuracy analysis

IntelliPaint — AI Art Generator | *React, MongoDB, Express, Node, Tailwind CSS, OpenAI API*

- Developed an AI art generation site using the OpenAI API to make high-quality art from text prompts
- Created a showcase page with Tailwind CSS and React, enabling users to search and download art
- Built REST endpoints with Express.js to connect to a MongoDB cluster & access images in Cloudinary

DevConnect — Developer Networking Platform | *React, Next.js, MongoDB, Express, Node*

- Engineered a Roblox developer networking platform to improve collaboration between studios & developers
- Integrated Roblox's API to provide in-depth analytics on user portfolios, game engagement, & studio revenue
- Anticipated to reach **300+** developers and **30+** game studios with more than **20 million+** game visits

OtakuBot — Administrative Discord Bot | *Python, Replit, OpenWeatherMap API, Discord API*

- Developed a Discord bot in Python to help admins on **25+ servers** manage **500+ members**
- Increased user engagement by **30%** through message-based games built with the Discord API and Repl.it's DB

Achievements

Lighthouse Hacks Organizer - Attracted 250+ hackathon participants and $40,000+ in sponsorships
Professional Engineers of Ontario Scholarship - Top 3 Ontario engineering undergraduates
Best Decentralized Project Award - Hack The North 2023, Canada's largest hackathon
Best Project Award - Hack The 6ix 2023, Toronto's largest hackathon

Education

University of Waterloo Waterloo, ON
Candidate for Bachelor of Computer Engineering *2022 – Present*