

# Justin Lau

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## EDUCATION

### University of Waterloo

Candidate for Bachelor of Computer Engineering

Waterloo, ON

2022 – Present

## 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 Replit's DB

## ACHIEVEMENTS

**Lighthouse Hacks Organizer** - Led one of [the GTA's largest hackathons](#) with 250+ participants & \$40,000+ in prizes

**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