

JOSEPH DENG

josephdeng317@gmail.com | [Portfolio](#) | [LinkedIn](#) | [GitHub](#) | [647-335-9885](tel:647-335-9885)

EDUCATION

University of British Columbia

Bachelor of Science in Computer Science and Physics, Co-op program — 90.1% Average

Vancouver, BC

Sep 2023 – Apr 2028

SKILLS

Languages: Python, Java, C, C++, JavaScript, TypeScript, Assembly

Web: HTML, CSS, React.js, Node.js, Next.js, Astro.js, Bootstrap, Tailwind, Selenium, Cloudflare, Flask

Frameworks/Tools: Docker, AWS, Bedrock, Git, Matplotlib, Supabase, RESTful APIs, Blender, WSL

AI/ML: PyTorch, Stable Diffusion, OpenCV, Scikit-learn, NumPy, Weights & Biases, Vision Transformers, Model Training

TECHNICAL EXPERIENCE

Machine Learning Engineer | Metrized Inc.

Jan – Sep 2025

- Utilized a **cutting edge Image to 3D AI** to generate high fidelity models of furniture, helping clients **save up to \$5000 per unit** of shipping and scanning costs.
- Boosted YOLO object detection speed by **200%** by conducting **thorough benchmarks** and implementing TensorRT.
- Spearheaded the transformation of a full-stack web app into a **distributable desktop app** with Electron, rewrote and packaged python backend to use **dynamic ports**, and bootstrapped large modules to **optimize app size**
- Designed, implemented, and deployed a product landing page from scratch using **Docker containers** to ensure migratability, and **Cloudflare tunnels** to link a local port to a live domain

Fullstack Developer Intern | CS Toolkit Inc.

May – Jun 2024

- Executed dynamic API calls to Contentful using **Flask** to add pagination, tagging, and a search function to the company's **production blog page**.
- Engaged in a **multi-stage build and review process** with a professional UX designer, and reskinned the website to use a responsive, mobile-first layout to **improve user experience on small screen sizes**

Web Developer | UBC BIOMOD

Oct 2024 – Present

- Worked in a team of four to ship a **responsive, competition-ready** website in **less than 3 weeks** using Astro.js
- Finalized the production site by **reviewing several pull requests**, resolving code conflicts, and fixing critical bugs
- Constructed an eye-catching home page featuring a **controllable 3D model** of the team's microbiology project using **Three.js, Tailwind, and React**

PROJECTS

Urbanize AI | AWS Lambda, Bedrock, Expo, React.js, Python | [Demo](#)

Oct 2024

- Created an **AI-powered Urban Design** Improvement app that helps users identify changes that could be made in their own neighborhoods to improve sustainability, placed **top 4 out of 25+ teams** at UBC CIC Hackathon
- Engineered a serverless **AWS Lambda** function that made calls to send text and base-64 representations of images to an **generative AI model through Bedrock**
- Debugged Lambda function with Postman and CloudWatch to allow for easier testing of the API

AI Recipe Generator | Next.js, Node.js, React.js, Three.js, OpenAI API, Bootstrap | [Live Website](#)

May – Aug 2024

- Developed a **Node.js** backend that made asynchronous calls to the **OpenAI API** to create **AI-generated recipes** based on ingredients entered by the user.
- Designed the frontend web application with React to change the visibility of elements dynamically, and used Three.js to insert a custom interactive **3D model generated using Blender**.
- Refactored project to use the **Next.js app router**, enabling a **serverless deployment with Vercel**

Musical Ear Trainer | Java, JUnit | [GitHub](#)

Jan – Apr 2024

- Built an interface with Java Swing that quizzes the user on randomly generated notes made audible with MidiSynth
- Established a logical class hierarchy for storing previous quiz results which allowed the user to write and read their data to and from **JSON and SQLite**
- Produced a **comprehensive test suite using JUnit** to maintain a production-ready codebase.

ADDITIONAL WORK EXPERIENCE

Program Assistant | Shad Canada

Jun – Jul 2024

- Dedicated **90+** hour weeks to facilitate a STEAM program involving workshops and student-led entrepreneurship projects, displaying an unwavering sense of responsibility and commitment to student growth and innovation
- Maintained an engaged and respectful audience of **64** high school students during long hours of lectures & workshops, demonstrating strong leadership, patience, and communication skills
- Presented an interactive beginner-friendly workshop on 3D modeling using Blender.