

MARTIN SIT

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EDUCATION

University of Waterloo

Honours Bachelor of Computer Science, Co-op

4.0/4.0 GPA

Sep 2024 – May 2029

PROFESSIONAL EXPERIENCE

Machine Learning Research Intern | Python, MATLAB, TensorFlow, Keras

Jul 2023 – Aug 2023

Sunnybrook Research Institute

Toronto, ON

- Engineered a 3D convolutional neural network (CNN) to optimize treatment monitoring, enabling real-time analysis
- Achieved a 46x speed improvement with high accuracy, enabling ultra-fast image reconstruction approximations
- Expanded ML training data by 50% by generating synthetic radio frequency image datasets
- Conducted research on advanced neural net architectures (U-Net, ResNet, DenseNet) and implemented key findings

Cybersecurity Research Intern | Python, Flask, PyAutoGUI, Networking, Linux

Oct 2022 – Jul 2023

University of Waterloo

Waterloo, ON

- Architected a GUI automation system to collect over 20 GB of TCP/IP packet data from video conferencing calls
- Scraped and processed 100+ hours of video data to curate a robust dataset for ML model training
- Presented papers to lab group on traffic fingerprinting and censorship-resistant internet communications

PROJECTS

🔗 Make it Jake's – Resume Template Translator (3,000+ users) | Ruby on Rails, Redis, Docker, Remix, TypeScript, GCP

- Shipped jakesresu.me 🔗 (3,000+ users), enabling users to convert any resume into the industry-standard LaTeX template
- Built a containerized Ruby on Rails backend with Redis job processing, delivering RESTful APIs for resume generation
- Integrated LLMs into the backend for semantic resume parsing, enhancing the accuracy of LaTeX template generation
- Developed a responsive Remix frontend with live LaTeX rendering and deployed it using Google Cloud Platform

🔗 Twirl – AI Agent for Building CAD Models (UofTHacks Winner) | FastAPI, React, Next.js, Three.js, OpenSCAD, Azure

- Developed an AI CAD modeling agent for instant parameterized 3D model generation from natural language prompts
- Enabled real-time model rendering and customization via interactive sliders, providing fine-tuned control
- Designed an intuitive Next.js frontend for seamless prompt input and live 3D visualization
- Delivered an end-to-end 3D printing pipeline, tested with a fully AI-generated chair

🔗 EcoRewards – Mobile Rewards App (Hack the North Winner) | Remix, React, Express.js, PostgreSQL, Tailwind CSS

- Won RBC's 1st Place (\$1,200) prize out of 842 participants at Hack the North 2024, Canada's largest hackathon
- Developed a mobile app using Remix and React to reward eco-friendly purchases, with AI-powered receipt scanning
- Designed the backend using Express.js and PostgreSQL, enabling seamless processing and classification of receipt data

🔗 Credibility – Full-Stack Web Research App | Python, JavaScript, React, Next.js, Tailwind CSS, Flask, Selenium

- Developed a web-based research tool that uses LLMs and key metrics to assess the credibility of websites
- Architected an analysis engine based on 10+ metrics such as publisher reputation, bias, sentiment, and traffic rank
- Leveraged GPT-4o and Selenium for automated multimodal evaluation of website content and UI

🔗 Sensai – Full-Stack Workout Coach | Python, JavaScript, Vue.js, Nuxt, Flask, OpenCV, Mediapipe, SocketIO, JWT

- Created a full-stack fitness platform, delivering real-time AI feedback with <100ms latency for live camera input
- Engineered the backend API with Flask and SocketIO for streaming pose calculations from OpenCV/Mediapipe
- Implemented secure user authentication with JWT and managed user sessions and data with MongoDB

OTHER EXPERIENCE

Hackathon Organizer – Web/Tech Head | React, Next.js, Tailwind CSS, MongoDB

Aug 2022 – Aug 2024

JAMHacks 🔗

Waterloo, ON

- Led redesign for event website with React and Next.js, improving UX for 700+ newly registered users
- Reduced file retrieval times by 60x through dynamic aggregation by re-engineering the MongoDB storage system
- Built QR code-based attendance system for workshops, streamlining check-ins for 180+ participants

SKILLS

Languages: Python, C++, Java, JavaScript, TypeScript, Ruby, SQL, Go, Racket, HTML5, CSS3

Technologies: React, Next.js, Express.js, Node.js, Flask, Django, Vue.js, Tailwind CSS, PyTorch, Tensorflow, Rails

Development Tools: Git, Docker, Bash, Linux, MongoDB, PostgreSQL, Firebase, AWS (Certified Cloud Practitioner 🔗), Azure, GCP