JOSHUA ZHOU

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EDUCATION

McGill University, Canada *Aug 2024 - Apr 2029*
B.Eng. Co-op in Software Engineering | GPA: 3.92
- Relevant Coursework: Object-Oriented Programming, Data Structures and Algorithms

Lillian Osborne High School, Canada *Sep 2021 - Jun 2024*
Cumulative GPA: 96% | 96th percentile Avogadro's Chemistry Contest | 80th percentile CEMC Fermat, Euclid, CLMC

SKILLS

Programming Languages:	Python, TypeScript/JavaScript, Java, SQL
Technologies:	React, Express, Node, FastAPI, Pytorch
Tools:	Git, Linux, ROS2, MongoDB, Docker, Vercel
Languages:	English (native), French (professional working)

PROJECTS

ImaginArray | ConUHacksIX @ Concordia University | https://imaginarray.vercel.app *Feb 2025*
Languages: TypeScript, Python | Technologies: React, Flask, Framer Motion
- Collaborated in a team of three to develop an array visualization tool in React TypeScript with a robust Flask server
- Developed a custom code execution environment and compiler leveraging Python's introspection and AST modules to parse user code, capturing array operations and variable updates in real time
- Constructed a user-friendly UI with clean animations in Framer Motion

Snooze Scribe and Snooze Model | https://snooze-scribe.vercel.app *Oct 2024*
Languages: Python, JavaScript | Technologies: PyTorch, NumPy, Pandas, React, FastAPI, MongoDB
- Programmed a full-stack sleep analysis tool with React and FastAPI, enabling users to record and visualize sleep patterns efficiently
- Developed a supervised Convolutional Neural Network (CNN) with PyTorch, trained on 500 user-generated audio samples, achieving 95% accuracy in classifying "snore" vs. "non-snore" sounds
- Deployed on Vercel and Heroku; attracted 20+ active users and collected 100+ nightly recordings in the first month
- Ensured safe user authentication using Auth0; Implemented playback and waveform visualization with WaveSurferJS

EXPERIENCE AND INVOLVEMENT

McHacks 12 (McGill's Largest Hackathon) | Montreal, Canada *Oct 2024 - Present*
Fullstack Software Developer
- Transformed complex Figma designs and into a responsive, full-featured React.js website with logging functionality for 800+ hackers, sponsors and staff
- Optimized the custom HackerAPI built with Node.js/Express by refactoring services and utilizing asynchronous programming routes to improve response times
- Streamlined production and maintenance with Agile methodology and a CI/CD pipeline with Git version control

McGill Mars Rover Team | Montreal, Canada *Sep 2024 - Present*
Software Developer | Drive Team
- Collaborated on a team of 20 software engineers to migrate ROS1 nodes to ROS2, using Git for version control and CMake for build management
- Engineered 10+ ROS2 topics, services and publishers with Gazebo simulations in Python enabling full-featured drive control
- Implemented an intuitive UI for rover control and simulation with responsive error handling and GPS functionality
- Integrated RCLNodejs communication with Gazebo/RViz visualizers deployed via a React web application

Edmonton Public Library | Edmonton, Canada *May 2022 - June 2024*
Student Page
- Facilitated the circulation of a 10,000+ item catalogue through the constant organization and verification of materials
- Reduced material processing error by 30% during staff shortages in 2023 by assuming additional responsibilities during staff shortages
- Engaged an audience of 25+ youth in weekly programs teaching STEAM related subjects