

Ghanem Ghanem

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SKILLS

- **Programming Languages:** Python, Java, C, HTML/CSS, TypeScript, JavaScript, Bash.
- **Frameworks:** FastAPI, Flask, GTK4, React, CDK.
- **Software Tools/Other:** AWS, Azure, Docker, Git, Gitlab CI/CD, PostgreSQL, REST APIs, Unix, Jira, Confluence, JetBrains

EXPERIENCE

Software Engineer

CARFAX

London, ON

Dec 2023 – Present

- Collaborate in an Agile team to design and deliver AI/ML-powered services, participating in sprint planning, daily stand-ups, and iterative development cycles.
- Developed full-stack applications using **React**, **Python** and **FastAPI**, integrating with various Large Language Models for features such as real-time chat and summarization.
- Deploy and maintain scalable cloud applications on **AWS**, leveraging services including **ECS**, **Lambda**, **Route 53**, **RDS**, **Neptune**, and **S3** to ensure high availability and performance.
- Architect and maintain a high-throughput video generation system in **Python** and **AWS**, using a microservice architecture to generate 100K+ videos per day via **ECS fargate**.
- Optimized video generation workflows reducing generation time by 72% by leveraging **ECS Fargate**, **Lambda**, and multi-threading in **Python**, resulting in an 80% cost reduction.
- Developed AWS **Lambdas** services to fetch and classify images. Generated Text-to-Speech (TTS) via **Azure OpenAI** which were integrated within the videos.
- Develop and maintain Infrastructure-as-Code (IaC) using **AWS CDK (TypeScript)** to enable consistent, modular deployments and manage cross-stack dependencies.
- Implement and monitor **CI/CD** pipelines, automating build, test, and deployment workflows for both frontend (**React**) and backend (**Python/FastAPI**) services to ensure fast, reliable delivery.

Software Developer (co-op)

Clearpath Robotics

Waterloo, ON

Jan 2022 - Sept 2022

- Developed a web server using **Sanic**, a **Python** asynchronous web framework (similar to **Flask**).
- Web-server was used to present comprehensive logs and data associated with ROS/C++ packages. This helped senior engineers in identifying issues within their **ROS** or **C++** packages, significantly expediting the troubleshooting process, enhancing the overall efficiency of the team.
- Implemented **Gitlab CI** pipelines for end-to-end testing making sure all endpoints were working.
- Implemented a **Docker** image and **Bash** Script that would create a minimal container for aws-fleet accounts to deploy robot simulations.

Web Developer (co-op)

University of Windsor

Windsor, ON

May 2021 – Sept 2021

- Collaborated with educators and students to publish Ebooks and Open educational resources (**OERs**).
- Published a website using **HTML**, **CSS** and **JavaScript**. Site was used to upload Ebooks and Open educational resources (**OERs**) to help keep students engaged in learning during the pandemic.

EDUCATION

University of Windsor

Bachelor of Science Honours Computer Science with Software Engineering Co-op (Minor in Mathematics)

Windsor, ON

PROJECTS

Python Blockchain PHR System

[Github link](#)

- Developed a blockchain using **Python** and **Flask** for a PHR system (Personal health record). **Flask**, **Javascript**, **HTML** and **CSS** was used to create a web application for users to create and store records.

Multi-threaded C Video Decoder

[Github link](#)

- Developed a multi-threaded video and audio decoder leveraging **C**, **FFmpeg**, **PulseAudio Simple API**, and **GTK4**.