

# Danial Suhail

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## Education

### University of Waterloo – Waterloo, ON.

Expected Graduation: April 2028

Bachelor of Applied Science (BASc), Computer Engineering | GPA: 3.7 / 4.0

**Courses:** Comm. in Engineering, Fundamentals of OOP & DSA (C++), Digital Circuits, Linear Circuits, Discrete Math & Logic.

**Awards:** Waterloo President's Scholarship (\$2000) & Ted Rogers Entrance Scholarship (\$2000)

## Skills

**Programming Languages:** JavaScript, TypeScript, Python, Java, C++, C#, C, Dart, Kotlin, HTML, CSS, SQL.

**Frameworks:** ReactJS, React Native, NextJS, Tailwind CSS, ExpressJS, JQuery, Flutter, Prisma, Java Swing, TensorFlow.

**Technologies:** AWS (S3, EC2, RDS), Git, REST, Docker, K8s, Postgres, MongoDB, OpenCV, scikit-learn, NumPy, Pandas.

## Experience

### Waterloo Midnight Sun – Waterloo, ON.

Sept 2024 – Present

*Firmware Engineer*

- Set up a development environment with **Vagrant** on x86, integrating custom **C** programs and **SCons** for execution.
- Designed and optimized **FreeRTOS** task scheduling, handling task priorities, blocking APIs, and implemented a queue-based communication system, improving task synchronization and reliability by **25%**.
- Engineered GPIO control logic for LED management and developed a multi-channel ADC driver for the ADS1115 using the I2C protocol, creating HAL solutions for efficient peripheral integration with an **STM32** microcontroller.

### e2 Young Engineers – Milton, ON.

June 2023 – July 2023

*Programming/Robotics Instructor – Coop*

- Prepared and delivered **Python** lessons for robotics, covering topics like robot movement control, sensor integration, **PID control**, and autonomous navigation, enhancing students' coding proficiency and practical skills in robotics applications.
- Created **5+ hands-on** coding/robotics projects to boost student engagement and enhance problem-solving capabilities.
- Conducted code reviews and debugging sessions, reducing errors by **50%** and improving project completion rates.

## Projects

**Lexigo** – [GitHub](#) | (React Native, Tailwind CSS, TypeScript, Hugging Face API, TensorFlow, Expo.io)

Oct 2023 – Nov 2023

### AR/AI-Language Learning Mobile Application

- Designed **React Native** Front-End components with **Tailwind CSS** to supply multi-platform compatibility (**iOS, Android**).
- Executed NLP real-time language translation with **Hugging Face API** and object detection/identification by finetuning **TensorFlow's** COCO-SSD ML model achieving an **85%** accuracy while ranking top **10** at **Uoft HTV 8**.

**RecipeLens** – [Website](#) | (Flutter, Dart, Android Studio, Edamam API, Spoonacular API)

Aug 2023 – Sept 2023

### Ingredient-to-Recipe Search Mobile Application

- Pioneered dual API compatibility (**Edamam API, Spoonacular API**) fetching **900+** recipe API results while managing text-to-speech, HTTPS requests, and SVG implementation.
- Spearheaded the mobile concept/layout through **Figma** while working on Front-End and Back-End integration providing a responsive modern minimalistic home page resulting in **Best UI/UX Design** out of **300+** participants.

**Study Showdown** – [GitHub](#) | (NextJS, ReactJS, Tailwind CSS, NodeJS, Firebase, GCP OAuth 2.0)

Aug 2024 – Sept 2024

### Gamified-Productivity Tracker Application & Browser Extension

- Constructed a **NextJS** website to track productivity, grading study sessions by connecting **100+** users via leaderboards.
- Developed a Chrome Extension using **ReactJS** and **TypeScript**, integrating **Firebase** DB and **GCP OAuth 2.0** to sync website activity data with its backend, enabling seamless POST and GET requests for real-time leaderboard rankings.
- Integrated **Auth0** login system, reformatting auth flows/actions to securely manage user data with platform compatibility.