

# Mohammed Al Ani

+1 905-745-5437 | [mohd.otmn@gmail.com](mailto:mohd.otmn@gmail.com) | [in](#) | [G](#) | [mohammedalani.ca](https://mohammedalani.ca) [✉](#)

## EDUCATION

### University of Waterloo

Waterloo, ON

*Bachelor of Applied Science in Mechatronics Engineering — GPA: 3.94/4*

*Expected Graduation Year: 2029*

- Option/Minor in Artificial Intelligence (AI)
- Engineering Scholarships: Awarded \$10,000+ for outstanding academic and extracurricular performance
- **Coursework:** Data Structures, Circuits, Control Systems, Embedded Systems, Algorithms, Machine Learning
- Dean's Honours List for outstanding academic achievement

## EXPERIENCE

### Firmware Engineer

Oct. 2024 – Present

*Midnight Sun Solar Car Team*

*Waterloo, ON*

- Developed firmware in Python (**MicroPython**) and C++ for real-time energy monitoring and optimization
- Integrated **data logging scripts** using Python (Pandas, Matplotlib) to analyze energy trends in the system
- Automated testing & debugging scripts in Python to identify issues in the power system, reducing errors by **30%**
- Used **Git** for version control, ensuring efficient collaboration and maintaining comprehensive documentation

## PROJECTS

### Full Stack NLP Chat Bot [✉](#) | *Python, Flask, NLTK, spaCy, HTML, CSS, JavaScript*

- Implemented natural language understanding using **NLTK**, achieving **85% accuracy** in intent recognition
- Integrated sentiment analysis using **spaCy**, achieving **92%** accuracy in detecting emotional tone from user messages
- Developed a responsive interface with **HTML, CSS, and JavaScript**, optimizing for fast load times & response
- Automated deployment with **Flask**, enabling quick server startup & minimal setup requirements for local testing

### CarPal – AI-Powered Car Image Analyzer [✉](#) | *React, Express.js, MySQL, Tailwind, JWT, Google Gemini*

- Built a full-stack AI car analyzer with login, upload preview, metadata extraction, and dashboard for **50+ users**
- Used **Google Gemini API** to extract structured car data (model, horsepower, price, make) from uploaded images
- Implemented **drag-and-drop** upload, image preview, and organized storage in user-specific server directories
- Designed a modern, animated UI using **React, Tailwind CSS**, and **Framer Motion** to boost UX by **30%**

### Expressjs.Yourself – Blog Platform [✉](#) | *Express.js, EJS, SQLite, JWT, Tailwind, Cookies*

- Developed a lightweight blog system supporting **100+ posts** with user login, post CRUD, and dashboard view
- Used **JWT** for session management, **bcrypt** for password hashing, and secure **cookie-based** user login system
- Added **HTML sanitization** and validation to protect users from **XSS** and malformed post content injection
- Featured **random blog** post system to increase homepage **engagement** and boost user retention by **25%**

### CurveFit Pro - Advanced Data Modeling & Fitting [✉](#) | *Python, Streamlit, SciPy, NumPy*

- Developed a web-based curve fitting tool, supporting linear, exponential, polynomial regression, and visualization
- Used **Streamlit** for web interface & **SciPy** for high-accuracy function fitting, regression, & curve analysis.
- Allowed users to upload and process large **CSV** datasets (10,000+ points) for analysis, visualization, & modeling

### Relasto - Creative Writing Website [✉](#) | *Python, Flask, MySQL, HTML, CSS, SASS*

- Developed a full-stack web application for sharing short stories, attracting 500+ unique visitors in the first month
- Designed a responsive, interactive UI using **SASS, HTML, CSS, and JS**, improving user engagement by **40%**
- Built a **Flask + MySQL** backend to handle user authentication, story storage, and search functionality

## TECHNICAL SKILLS

**Languages :** Python\*, JavaScript\*, C++, Java, SQL, MATLAB, HTML/CSS

**Frameworks/Libraries :** React, NumPy, Flask, Django, Node.js, TensorFlow, Pandas, OpenCV, SciPy, Bootstrap,

**Software & Tools :** Git, Docker, Jupyter, Streamlit, SPIKE Legacy, Figma, MS Azure, CLion, Spyder IDE, Anaconda

**Office Tools :** MS Office Suite, Google Workspace, Slack, MS Teams, Report Writing, Drafting, Excel Sheets, Power BI