

# Dylan MacLeod

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## EDUCATION

### Ontario Tech University

Ontario, CA

*Bachelor of Science in Computer Science*

*April 2027*

- President's List and Honour Roll Student
- Java, Python, C++, Data Structures and Algorithms

## EXPERIENCE

### CarSpotters Website Developer

June 2024 – August 2024

*Fullstack Developer*

- Launched and deployed a full-stack social media platform for car enthusiasts, allowing users to post car photos with location details, engage with other via liking, commenting, and favouriting, and explore cars in their area with map integration (Bing Maps API)
- Utilized React and Node.JS to build a scalable, real-time application for user interactions, live chats and notifications, enhancing the overall user experience
- Designed and implemented RESTful API and WebSocket endpoints for continuous user interaction between the front-end and back-end, enhancing real-time capabilities and user experiences
- Investigated methods to implement secure user authentication and authorization, providing a fast and secure access using JWT and OAuth Via PassportJS, with user data stored in MongoDB

## PROJECTS

### Web Browser | *Python, Tkinter*

November 2024 - January 2025

- Constructed a simple web browser from scratch using Python, implementing core functionalities such as HTML rendering, networking, Javascript execution and user interactions
- Integrated a custom HTTP client to download, parse HTML, apply CSS styles and render on an interactive canvas
- Implemented interactive features such as form submission, DOM manipulation and Javascript event handling to provide real-time interactions with the browser
- Optimized performance by leveraging efficient algorithms and data structures to improve event loops, thread scheduling and GPU-accelerated animations, doubling overall browser speed

### Chatroom + AI Implementation | *JavaScript, React, Node.JS, MongoDB*

July 2024 – August 2024

- Engineered a robust full-stack application using React and Node.JS, integrating real-time communication features making use of WebSocket endpoints to enable seamless user interaction
- Built a AI-powered chatbot using Google Generative AI, which automatically engages with users upon registering, capable of features such as replying, commenting and interacting with the user dynamically
- Designed and implemented user customization features, allowing the user to adjust profiles and themes, improving user interaction and satisfaction
- Implemented secure messaging and user authentication, utilizing PassportJS along with NodeMailer for email recovery and notifications, ensuring smooth communication and account management

### Weather Telemetry Reader | *C++/Arduino IDE, Hardware Components*

May 2023 – June 2023

- Produced an Arduino-based weather monitoring system using a DHT11 temperature and humidity sensor to collect and display environmental data in real-time on a LCD module, achieving a 95% accuracy in readings
- Implemented data storage functionality to store over 1000 data points, enabling easy retrieval and analysis on collected data
- Explored and applied programming techniques along with hardware components to build interactive systems, leveraging several components for real-time data processing and manipulation

## TECHNICAL SKILLS

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

**Frameworks:** React, Node.js, Flask, Express, Springboot

**Developer Tools:** Git, Linux, Windows, Google Cloud Platform, VS Code, Visual Studio, IntelliJ

**Libraries:** pandas, NumPy, Matplotlib, Passport JS, Salt/Hashing, w3lib, ssl, gzip, socket