

Dylan MacLeod

289-600-0282 | dylanmacleod2005@gmail.com | [linkedin.com/in/dylan-macleod](https://www.linkedin.com/in/dylan-macleod) | github.com/Macpickle | Whitby, ON

EDUCATION

Ontario Tech University

Ontario, CA

Bachelor of Science in Computer Science

April 2027

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

WORK EXPERIENCE

CarSpotters Website Developer

June 2024 – August 2024

Full-stack Developer

- Launched and deployed a full-stack social media platform for car enthusiasts, enabling users to post car photos and interact via a live map interface. Integrated Bing Maps API, which was queried over 100 times during the initial phase
- Utilized React and Node.JS to build a scalable, real-time application for user interactions, live chats and notifications, enhancing the overall user experience
- Engineered secure user authentication and authorization systems that provided fast, reliable access through JWT and OAuth via PassportJS; enhanced security for several users while storing sensitive data in MongoDB

PROJECT EXPERIENCE

Web Browser | *Python, Tkinter*

November 2024 - January 2025

- Constructed a simple web browser using Python, implementing core functionalities such as HTML rendering, networking and Javascript execution
- Integrated a custom HTTP client to download, parse HTML, apply CSS styles and render on an interactive canvas, averaging a loading time of 1 second
- Configured 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 an AI-powered chatbot using Google Generative AI, capable of engaging with users dynamically, with an average response time of under 2 seconds during internal testing
- Implemented secure messaging and user authentication, utilizing PassportJS along with NodeMailer for email recovery and notifications, ensuring smooth communication and account management
- Authored Git workflows and version control strategies to streamline development, ensuring code consistency, reducing merge conflicts, and troubleshooting versioning issues

Scientific Data Analysis | *Python, Matplotlib, Numpy, Pandas*

November 2024 - December 2024

- Analyzed over 12,000 traffic accident records, identifying higher accident rates on weekdays, particularly Fridays, with a notable increase during peak rush hours (07:30-09:00 and 16:00-18:00)
- Linked traffic accidents to workweek stress, fatigue, and distractions related to weekend plans, explaining higher accident rates during weekdays due to increased traffic from commuting
- Created and visualized a left-skewed distribution and line of best fit for accident data, identifying significant spikes at specific times (e.g., 17:00) and using insights to inform potential safety improvements and preventative measures

TECHNICAL SKILLS

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

Frameworks: React, Node.js, Flask, Express, Spring Boot

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

Skills: OOP, HTTP, problem-solving