Joseph Marcotte

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EDUCATION

University of Michigan **Ann Arbor, MI**

Computer Science, Bachelor of Science in Engineering *September 2022 - December 2025*

Coursework: Data Structures and Algorithms (EECS 280 & 281), Data Science (ENGR 101), Computational Linear Algebra (ROB 101), Discrete Math (EECS 203), Physics 140/240 (Python)

SKILLS

C++, Typescript/Javascript, Vue, Node.js, SQL, Rest APIs, React, HTML/CSS, Google Apps Script, Visual Basic, Git Version Control

WORK EXPERIENCE

Michigan Dining

Ann Arbor, MI

Software Engineer *September 2022 – Present*

- Automated daily audits using Google Apps Script to pinpoint vendor invoice discrepancies and generate program manager reports. This effort has significantly reduced costs by preventing overcharges.
- Developing macros in Visual Basic for Excel to efficiently transform raw and unstructured data from Excel files into well-organized and tailored tables, aligned with specific department or unit requirements. This process streamlines data processing, enhancing data quality for informed decision-making.

Covenant Eyes

Owosso, MI

Software Engineering Intern *May 2023 – August 2023*

- Enhanced member account review processes through third-party integration, streamlining data sharing between account managers and optimizing the frontend based on agent feedback and insights from nightly cron jobs.
- Led migration from a legacy application to a new internal tool microservice that optimizes managing promo codes and their affiliates while incorporating client feedback for continuous improvement.
- Added to and enhanced Rest APIs with Typescript, Node.js, SQL, and the Zod data validation library.
- Utilized Vuex State Management, Typescript, and APIs across multiple microservices and third parties for the frontend.
- Collaborated across teams, followed Agile practices, and utilized CI/CD pipelines for efficient development

PROJECT EXPERIENCE

NFL Game Historical Data *August 2022*

- Developed a React website that allows a user to display desired team data as well as the timeframe they want.
- Obtains data from a JSON file using a Node.js built in function to load modules.
- Utilized React Router to incorporate navigation between components.
- The user's selections are saved to local storage, and extracted by parsing.
- This displays a cleanly formatted table with the team data, improving the efficiency to analyze nfl data.

Euchre *February 2023*

- An object oriented program that simulates a game of Euchre, supporting an AI and human player.
- Built using C++ and Test driven development.

Machine Learning with Car Data *November, 2022*

- Categorized car data into clusters based on given categories like mpg, number of cylinders, and engine size, into K “clusters” of data that have similar properties using a K-means algorithm. Interpreted a csv file for the dataset and used object oriented design with C++.
- After the convergence algorithm finishes, the data is presented in a 3D scatter plot using MatLab along with respective centroids.

Black Jack *June, 2022*

- Built a JavaScript website that allows a user to play black jack against a dealer.
- Uses algorithms to have realistic odds and logic to determine the dealers decisions and hand.
- Displayed with a mobile responsive interactive design using media queries.

Paper Football League Scoreboard *April, 2022*

- Refined a way to keep score for a board game my brother and I invented by using Javascript to make easy to access buttons that would increase the score as well as control a start and stop timer.
- This program improves gameplay speed by 100%.