Joseph Marcotte

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EDUCATION

University of Michigan   **Ann Arbor, MI**
Computer Science, Bachelor of Science in Engineering   *2022 - 2025*
Coursework: Data Structures and Algorithms (EECS 280 & 281), Data Science (ENGR 101), Computational Linear Algebra (ROB 101), Discrete Math (EECS 203)

WORK EXPERIENCE

Covenant Eyes   **Owosso, MI**
Software Engineering Intern   *May 2023 – August 2023*
- Revamped member account review and management processes from three separate applications down to one by integrating into Zendesk, an open source ticketing software. This integration harnessed data from nightly cron jobs, and automates user account data sharing between account managers and customers. Consequently, all their business needs were centralized within a single software service, resulting in a total 50% reduction in account management time.
- Led migration from a legacy application to a new internal tool microservice with Vue, Typescript, Node.js, and SQL to optimize managing promo codes and their affiliates. This tool streamlines affiliate linking and presents insightful data requested by user feedback throughout the agile development cycle.
- Elevated the backend's Rest APIs by integrating Typescript, Node.js, and SQL, along with the Typescript Zod data validation library for thorough HTTP request and response validation. Additionally, applied Vue, Vuex State Management, Typescript, and APIs across multiple microservices and third-party systems for the user interface. Built with data security in mind by removing any SQL database injection attack risks.
- Collaborated across teams, followed Agile practices, and utilized CI/CD pipelines for efficient development.

Michigan Dining   **Ann Arbor, MI**
Software Engineer   *September 2022 – Present*
- Automated daily audits to run nightly using Google Apps Script to pinpoint vendor invoice discrepancies and generate reports for the program manager. This effort has saved the University $10,000 monthly.
- Developed 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.

PROJECT EXPERIENCE

NFL Game Historical Data   *August 2022*
- Designed and implemented a user-friendly React application for NFL Game Historical Data where users can conveniently access and display team data within their chosen timeframes. Leveraged Node.js to fetch data from a JSON file, incorporated React Router for seamless component navigation, and enabled users selections to be stored in Local Storage. This enhanced data analysis efficiency by presenting neatly formatted tables of NFL Data.

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 by interpreting a csv file for the dataset using object oriented design with C++.
- After the convergence algorithm finishes, the data is presented in an informative 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, improving gameplay speed by 100%.

SKILLS

Languages: C++, Typescript/Javascript, Node.js, SQL, HTML/CSS, Google Apps Script, Visual Basic, Python
Tools, Methodologies, and Frameworks: Vue, Vuex, Rest APIs, React, Git, Test Driven Development, CI/CD, Agile