KUMARAN NATHAN

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EDUCATION

University of Michigan, Ann Arbor   Bachelor of Science in Computer Science   *August 2021 - 2025*
Rising Junior   Minor in User Experience Design

EXPERIENCE

WolverineSoft Studio - *Programming Quality Assurance*   *July 2023 -*
- Developed and contributed to the architecture of various **UI/UX** mechanics including menu functionality, user interface design, **bug monitoring**, workflow control, **game mechanics** and quality assurance for Project Quest.
- Employed Git with version control to keep track of changes in the codebase and manage collaborative efforts within the team.
- Leveraged the **Unity** game engine in conjunction with Visual Studio to utilize **C#** scripts and debug game elements.
- Collaborated with a team of programmers to optimize game efficiency and workflow.
- Utilized **Confluence** and **Jira** to collaborate with team members throughout the game development process and workflow.

MRacing - *Powertrain / Autonomous Team*   *September 2022 - 2023*
- Implemented the telemetry data application in **C++** in order to handle higher data rates and achieve **15%** gain in performance goals than previous based applications.
- Updated the team's current Binary file to a Txt file converter for our viewer program to include the **Windarab AP**I, using C++ and **Python**.

PROJECTS

Valorant Chatbot   *June 2023*
- Leveraged **OpenAI's API** to design and implement a real-time chatbot for Valorant, enhancing player engagement and gameplay experience.
- Integrated chatbot into a website with **HTML/CSS** to create an engaging chatbot interface, enhancing user accessibility and interaction for information and services.

Machine Learning Classifier   *March 2021*
- Implemented a **Machine Learning** search classifier aiding in predicting topics for Piazza posts within class.
- Created numerous ADTs and utilized comparators, binary search trees, templates, and recursion to implement a program that uses **natural language processing** and machine learning.
- This program was then able to automatically classify posts on Piazza, a learning Q/A forum website, by subject and class with an **91% success rate.**

Stock Market Simulation   *February 2023*
- Developed a stock market simulator program that was wrapped as a Star Wars battle simulation using C++.
- Implemented a **streaming algorithm** to calculate the optimal point to buy/sell commodities for the highest profit margin.
- Utilized runtime efficiency techniques such as priority queues and the STL.
- Leveraged the **running median algorithm** for real-time calculation of stock market trends.

SQL Emulator   *December 2022*
- Created a **SQL** relational database emulator in **C++** utilizing hash indexing that reads data and takes user input to create, delete, and join tables and generate indexes on specific columns
- Optimized Indexing by implementing efficient indexing on specific columns to **accelerate query execution**, improving overall database performance.

ADDITIONAL INFORMATION

Technical Skills: C/C++, HTML, CSS, JavaScript, React, SQL, R, Tableau, Microsoft Office, Adobe Creative Suite, Confluence, Jira
Relevant Coursework: Data Structures and Algorithms, Computer Architecture, Machine Learning, Probability and Statistics, Web Development, Design, and Accessibility, Game Design and Development with Unity, Discrete Mathematics.
Languages: English, German