

Marvin Jirapongsuwan

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EDUCATION

University of Michigan, Ann Arbor: *Dean's List, University Honors*

B.S.E. in Computer Science

May 2026

GPA: 3.88/4.0

Relevant Coursework: Operating Systems, Data Structures & Algorithms, Web Systems, Computer Security, Intro to Computer Organization

WORK EXPERIENCE

Undergraduate Research Assistant

Ann Arbor, MI

UM Direct Brain Interface Lab

Sep 2024 - Present

- Developed EEG-based BCI applications in C++ for physically impaired individuals to communicate via brain signals
- Implemented error checks and resolved core bugs in AAC-BCI keyboard module, focusing on physical port validation, key selection, and stimulus mapping – reducing flash misalignment, calculation, and hardware failures by 30%
- Enhanced Choice-Making module by adding a stimuli-skipping system, stimulus isolation, and refactoring the image flashing algorithm to improve response time and flexibility

Database Engineer

Ann Arbor, MI

Michigan Hillel

Sep 2023 - May 2024

- Maintained visual database Little Green Light (LGL) of over 87,000 constituent and event attendees' information records
- Validated and corrected data imported from physical spreadsheets into database to accurately track and minimize inconsistent information on sheets to improve information facilitation between departments

Web Engineer Intern

Bangkok, Thailand

Delta Dynamics (DDX)

Jun - Jul 2022

- Designed prototype website in a team of 3 on Wix with complete UI/UX design and functionality for BMW
- Coordinated and attended client meetings across different divisions to gain insight for enhanced features
- Utilized agile methodology for 2-week sprint workflow to deliver features quickly and efficiently

Data Analyst Intern

Phrae, Thailand

Wall's Ice Cream, Unilever

Apr 2018 - Apr 2021

- Presented and analyzed monthly performance data set of 4 commercial truck routes; compiled orders into 39 graphs and bar charts for optimized route planning, and awareness of external factors
- Shadowed onsite workers' daily delivery through 4 routes containing over 100 stores and \$4k+ orders
- Optimized supply chain delivery, storage, and scheduling for the SAP HANA Resource Planning System through onsite research

PROJECTS

Thread Library | C++, Multi-threading, Mutexes, Condition Variables, Semaphores, Unix

- Implemented a kernel C++ thread library on Unix, handling CPU booting, thread management, management of 50+ CPUs, interrupts, atomicity, and FIFO scheduling order
- Designed spin-locks, mutexes, conditional variables utilizing advanced Unix context management

Reddit Classifier, Aitah | React, Python, FastAPI

- Implemented Reddit-based classifier using a bag-of-words model, achieving 84% accuracy on 3,000+ posts
- Devised single-word probability feature, evaluating 24,000+ words to highlight model biases with user-friendly

Event Planning Tool, Hangout! | React, Next.js, Node.js, MongoDB

- Feature-rich social media app enhancing event planning experience and minimizing user miscommunication
- Real-time events monitoring, instant notifications, and support for creation, storage, and sharing of users' personalized events

Manual EQ Tool, Parrot Producer | C++, JUCE Library, Digital Signal Processing

- Spearheaded DAW plugin using JUCE that facilitates EQ for music producers, user-friendly functionality for beginners
- Instant audio processing with GUI, allowing manual tuning of Frequency, Gain, Quality and EQ

Heat Quantity Prediction Website, Feel The Heat | Python, Flask (Jinja), Folium, Matplotlib, Geopandas

- Led a Team of 3 to develop a website that displays past, present, and future heat map data of all countries
- Created map visualization backend of 20+ dynamic pages and video presentation to enhance user experience

SKILLS

Languages C++, C, Python, JavaScript, SQL, Lua, MATLAB

Technologies React, Next.js, FastAPI, Node.js, MongoDB, Pandas, Google Cloud

Certificates Google Data Analytics, AI Deep Learning Specialization, Harvard CS50: Intro to Computer Science

Awards Crimson Hackathon Winner, CS Umich Scholarship, Bronze Medal-ASMO