

KUSHAL PATEL

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Education

University of Michigan - Ann Arbor, MI

Aug 2022 - May 2026

Bachelor of Science in Computer Science

GPA 3.84

- **Relevant Coursework:** Data Structures and Algorithms, Web Systems, Discrete Math, Computer Organization, Foundations of Computer Science, Computer Security, Programming & Data Structures

Experience

University of Michigan, Info & Tech Services

Jan 2024 – Apr 2024 & Aug 2024 – Dec 2024

Software Engineer Intern

Ann Arbor, MI

- Accelerating image workflow by **66%** for over **50** web developers by building **3** plugins for Wordpress, Drupal, and Google Slides that automatically generate alt text via **AI**.
- Generating WCAG-3 compliant alt text by utilizing **Microsoft Azure AI Vision** & **OpenAI GPT-4o** APIs and employing advanced **prompt engineering** techniques like multi-step prompting and temperature tuning.

Next Play Games

May 2024 – Aug 2024

Software Engineer Intern

San Mateo, CA

- Introduced a fantasy style baseball game on web and mobile by developing **6** client-side pages using **React**, **CSS**, **Typescript**, **React Native**, and **Figma**.
- Orchestrated a **Postgres** database to manage backend services for **2,087** athletes and **30** MLB teams by utilizing **Node.js** & **Express.js** to create **8** REST API endpoints for delivering live stats, projections, and news.

Infinite Degrees

Aug 2022 – Dec 2022

Software Engineer Intern

Ann Arbor, MI

- Quantified an individual's skill rating by devising a **DNN** regression model via **Keras** API to weigh **398** snowboarding tricks on difficulty. Validated accuracy by testing on a sample of **101** athletes, ranging from Olympian to amateur.
- Assigned snowboarding skill rating to **87** active users by accessing **MySQL** database via **Node.js** to run the machine learning algorithm on user uploaded tricks and routines.

Projects

NFL Spread Predictor | *Python, HTML, CSS*

- Engineered a **Pandas** dataframe of **304** metrics for all NFL games in the past **7** years by web scraping via **Selenium**.
- Predicted score differential of future games by building an **ANN** via **TensorFlow** library & the dataframe.
- Accomplished **58%** win rate and finished **+25 units** against DraftKings spread across **149** NFL games.
- Shared weekly picks by scripting a static site generator (**Jinja2**): https://kushal5294.github.io/nfl_spread.html.

BallotBank App | *Swift, SwiftUI*

- Launched a **decentralized voting platform** on iOS by engineering a mock **blockchain** stored on **MongoDB** to store classified data, ensuring fairness, immutability, & encryption for users: https://kushal5294.github.io/ballot_bank.html.
- Assembled an informative **investing platform** by displaying live crypto valuations for over **10,000** cryptocurrencies, focusing on top **100** coins and spotlighting top **5** fastest growers via CoinGecko's API.
- Enabled users to display live portfolio worth, view analytical charts, & track assets by logging personal **crypto wallet**.

Search Engine | *Python, React, CSS*

- Created **Hadoop** style MapReduce server by employing **TCP** and **UDP** sockets and threading to facilitate manager to worker protocol and fault tolerance.
- Built **inverted index** of **2,936** Wikipedia pages by running the tf-idf algorithm through **MapReduce** pipeline.
- Delivered top **10** page hits by creating **Flask** REST API that consults inverted index & PageRank score.
- Constructed frontend UI & deployed to **Amazon Web Services**: https://kushal5294.github.io/search_engine.html.

Skills

Languages: Python, C++, JavaScript, Typescript, React, Swift, HTML/CSS, Java, SQL, PHP, Bash

Technologies: Pandas, Flask, Hadoop, Slack, Docker, Node.js, AWS, MySQL, PostgreSQL, MongoDB, FireBase

Concepts: OOP, Web Development, Agile Development, Machine Learning, Cloud Computing, Full Stack