Kush Patel

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EDUCATION

University of Michigan   Ann Arbor, MI
Bachelor of Science in Engineering Computer Science   *Expected Graduation: May 2026*
- **Relevant Coursework**: Data Structures and Algorithms, Object Oriented Programming, Computer Architecture, Operating Systems, Web Systems, Foundations of Computer Science, Discrete Mathematics, Statistics
- **Certifications**: AWS Certified Cloud Practitioner

EXPERIENCE

Software Engineer   Feb 2025 – Present
MedStory LLC (Startup)   *Ann Arbor, MI*
- Devised a cross-platform mobile app with **React Native**, **TypeScript**, **Django**, and **MySQL**, enabling **100+** patients to log symptoms and medications and share structured, accurate updates with healthcare providers
- Aggregated user symptom and medication logs and integrated the **Groq API** to generate **AI-driven clinical summaries**, streamlining doctor visits by transforming raw patient data into visit-ready reports
- Containerized the application with **Docker**, standardizing development environments and reducing project setup time by **85%** across the team
- Leveraged **Jira** to manage sprint planning, task tracking, and feature coordination, supporting an **agile workflow** across a **15-member** development team

Software Developer   Nov 2024 – Present
Village Groceries   *Canton, MI*
- Streamlined inventory operations by developing a centralized, full-stack management system using **Django** and **React**, integrated with a **PostgreSQL** database to handle and track **3,000+ products**
- Designed a dynamic dashboard with **Django REST Framework** and **React Query** to display real-time product metrics, improving product visibility and accelerating restock decisions
- Implemented real-time stock monitoring with **WebSockets** via **Django Channels**, enabling instant low-inventory alerts to maintain product availability and minimize shortages

PROJECTS

Network File Server | *C++, TCP/IP, Computer Networking, File Systems, Multi-threading* Mar 2025 – Apr 2025
- Programmed a **TCP/IP-based network file server** using low-level **socket programming in C++** to receive, parse, and respond to client file system operations over a custom protocol
- Implemented a **crash-consistent, multi-threaded file server** with per-request **concurrency and fine-grained locking** to ensure safe parallel access and reliable disk updates

Multi-threading Library | *C++, Linux, Multi-threading, Operating Systems*   Jan 2025 – Feb 2025
- Engineered a user-level thread library in **C++** for **Linux/x86 systems** from scratch, including **synchronization primitives**, to support concurrent programs with safe and efficient execution on a **uniprocessor system**
- Wrote a comprehensive **test suite** simulating common concurrency patterns and edge cases, verifying correctness through deterministic control flows and ensuring absence of **race conditions** and **deadlocks**

Search Engine | *Hadoop, MapReduce, BeautifulSoup, Threading, Python, Flask, REST API*   Oct 2024 – Nov 2024
- Constructed a scalable search engine by designing a multi-stage **MapReduce pipeline** using **Hadoop** to generate an inverted index from over **3,000 web-scraped HTML pages**
- Applied **information retrieval** techniques, including text analysis with **TF-IDF** and link analysis with **PageRank**, to enhance ranking accuracy and improve the relevance of search results during retrieval
- Developed a **service-oriented architecture** using a **Flask RESTful index server API** and a dynamic search server, enabling efficient query handling and real-time search results delivery

TECHNICAL SKILLS

Languages: C/C++, Python, SQL (PostgreSQL, MySQL, SQLite), JavaScript, TypeScript, HTML/CSS, Java
Frameworks: React, MapReduce, Flask, Django, REST APIs, Django Rest Framework, Cypress, Pytest, TCP/IP
Developer Tools: Git, GitHub, Jira, AWS, Docker, Debugging, Linux, Multithreading