Pranav Varshney

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Education

University of Michigan **Ann Arbor**
B.S, Computer Science & Data Science May. 2026
Courses: Data Structures, Algorithms, Web Systems, Databases, Operating Systems, Networks, Deep Learning, Practical Data Science
Activities: Michigan Research & Discovery Scholars, Michigan Hackers, Pickle ball, Michigan Poker Club, Indian Student Association

Work Experience

COMPFOR 131 | Undergraduate Teaching Assistant Aug. 2024 – Dec. 2024
- Overhauled the course curriculum, adding 3 new projects and 2 new lectures to the course, increasing student engagement by 20%
- Developed a Python script to automate grading, piping results into Canvas, and course database, reducing grading time by 99%

United Wholesale Mortgage | Software Engineer Intern May. 2024 – Aug. 2024
- Piloted a change insights data pipeline in C# and SQL to populate UWM's data lake and identify trends to improve code quality
- Reengineered database organization to reduce data redundancy, pushing Google Cloud migration on an accelerated timeline
- Launched a CRUD dashboard to monitor GCP costs and usage, flagging overuse and maintaining proper data handling etiquette
- Initialized a decision tree in Python with the Risk and Finance to classify loans as success or failures, saving $20,000 in Q3 costs

Outlier AI | Data Science Intern Jan. 2024 – May. 2024
- Maintained scalable data pipelines in Python and SQL to support user analytics, optimizing workflow to reduce runtime by 30%
- Constructed visual aids in Python and R, highlighting trends in common search queries, improving the recommendation algorithm
- Documented company's data models and ETL processes for investors, clarifying technical details and design decisions for business

The Michigan Daily | Web Developer Oct. 2023 – Apr 2024.
- Lead the error handling processes for the website, fixing over 75 website errors and broken components to improve user experience
- Optimized website performance by 44%, reducing page redirects and HTTP requests thus raising user engagement length by 10%
- Compiled full documentation highlighting the methodology for new team members to learn the Michigan Daily's code guidelines

Ratna Global Technologies | Software Engineer Intern Jun. 2023 – Sep. 2023
- Spearheaded the development of a car rental website for clients, using React and Node to build a user-friendly and scalable platform
- Built a custom chat bot to answer customer queries, automating customer support tasks and saving 5-10 hours of work weekly
- Designed a database schema in PostgreSQL to store user data, reducing data redundancy and improving data retrieval times by 20%

Research Experience

Liu Laboratory | Undergraduate Researcher Incoming Jan. 2025
- Using Machine Learning to develop Self-Operating Computer Networks

The Big-DIG Laboratory | Research Assistant Apr. 2023 – Jun. 2023
- Employed a custom school heap queue sorting function in Python to sort 750+ schools, guiding lab to conclude in 2 months early
- Demonstrated a 99.5% statistical significance through hypothesis testing in R and supplemental simulations / visual aids in Python

The London Business School | Research Assistant Jan. 2023 – Apr. 2023
- Leveraged Python to extract, clean and load data from 500 contracts into a mimicked SQL database; optimized extraction by 25%
- Determined 90% confidence in internal and external contracts differences using machine learning and statistical analysis in Python

Projects

SD-WAN Analytics (2024 Cisco HackAIthon): Designed a dashboard that uses artificial intelligence driven solutions for SD-WAN anomaly detection, root cause analysis and predictive remediation using SLA metrics, device health, and application insights inputs

ChessNav: Innovated a chess evaluation tool in Python with 88% accuracy in comparison to top engines for 2024 Candidates tournament. Integrated Leila and Stockfish to run parallel simulations analyzing random positions from the World Chess Championship

GlassNav: Applying object oriented C++ & Micropython to develop custom smart glasses with image, video and audio capturing features. Working towards developing an AI system with a feedback and response feature based on the media captured and uploaded

Skills

Languages: C++, Python, C, HTML/CSS, JavaScript, SQL, R, Java, C#, LaTeX, Tyspt
Technologies: Git, Linux, JIRA, Docker, MySQL, PostgreSQL, Flask, React.js, Astro.js, QisKit, Pandas, Numpy, TensorFlow, PyTorch
Interests: Chess, Astronomy, Law, Psychology, Education, Cinema, Poker