Pranav Varshney

Pranav Varshney | Github | Email | US Citizen | (636) 675 0940

Education

University of Michigan — Ann Arbor, MI
Bachelors of Science in Computer Science & Statistics — *May. 2026*

CS Courses: Data Structures, Algorithms, CS Theory, CS Organization, Database Systems, Web Systems

Stats Courses: Computational Statistics, Data Analysis, Linear Algebra, Calculus I-III, Probability Theory

Extra-curriculars: Michigan Hackers, Michigan Research and Discovery Scholars, Michigan Poker Club

Technical Experience

United Wholesale Mortgage — Pontiac, MI
Incoming Software Engineer Intern — *Starting May. 2024*

The Michigan Daily — Ann Arbor, MI
Web Developer — *Oct. 2023 – Apr. 2024*

- Lead error handling and debugging processes, fixing 50+ website errors to make user experience more enjoyable
- Cut down website vulnerabilities by 40% with team, maintaining site's integrity through user authentication
- Increased website efficiency by 44% reducing redirects, and improved user engagement by 15% with supervisor help

Ratna Global Technologies — Newark, CA
Software Engineer Intern — *Jun. 2023 – Sept. 2023*

- Spearhead construction of a Node & React website used to control a vehicle rental service with 50+ locations
- Oversaw project front to end through streamlined communication in slack, adhering to proper agile development
- Addressed customer service requests and issues by integrating an AI chatbot using OpenAI's API as a resource
- Increased website efficiency by 60%, and improved user engagement by 33% with help of colleagues

Research Experience

The Big-DIG Research Lab — Ann Arbor, MI
Undergraduate Researcher Assistant — *Apr. 2023 – Jun. 2023*

- Developed a Python sorting algorithm that sorts school ranks and location from 750+ schools automatically
- Launched a postgreSQL database to regulate data manipulation, reducing time taken to access data by 2+ minutes
- Guided lab to conclude 2 months ahead of schedule, adhering to proper agile development methodology
- Created a 99.5% statistical significance test to find relevance through exporting and analyzing data in R Studio

London Business School — Remote
Undergraduate Researcher Assistant — *Jan. 2023 – Apr. 2023*

- Leveraged natural language processing to extract data from 2,500+ contracts using the NLTK library in Python
- Constructed a postgreSQL database to manage data manipulation, decreasing time taken to access data by 25%
- Determined 95% significant difference in structure of internal and external contracts through Microsoft Excel
- Presented findings to over 1000 participants at annual Michigan Research and Discovery Scholars symposium

Project Experience

C++ Standard Library: Leveraged C++17 features to implement and optimize data structures in standard library, enhancing code efficiency and maintainability while staying up-to-date with latest language advancements.

TSP: Implemented a branch and bound algorithm to speed up the brute force solution for the famous TSP, implementing a custom arbitrary insertion heuristic to improve the time complexity by a more accurate upper-bound calculation.

SQL Imitation: Mimicked simple SQL functionality in C++, customizing C++17 functionality via shell scripting. Harnessed custom SQL functionality to restructure previous research projects, boosting runtime efficiency by 15%

Programming Skills

Languages: C/C++, Python, Java, R/RStudio, HTML/CSS, Javascript, PostgreSQL, LaTeX

Technologies: Linux, Unix, Git, nano, nvim, MacOS, Windows, Visual Studio, VScode, Xcode, Zed, JIRA, Docker

Libraries and Tools: Pytorch, Tensor, Scikit-learn, Pandas, Numpy, NLTK, Matplotlib, Jupyter Notebook