Pranav Varshney

LinkedIn Github Website Email US Citizen (636) 675 0940

Education

University of Michigan May. 2026
Bachelors of Science in Computer Science & Statistics; Minor in Electrical Engineering *Ann Arbor, MI*

Courses: Advanced OS, Web Systems, Databases, Computer Hardware, Computer Theory, Data Structures, Algorithms, Linux, Logic Design, Distributed Systems, Probability & Statistics Theory, Computable Statistics

Organizations: Michigan Hackers, Michigan Research & Discovery Scholars, Poker Club, Club Cricket

Programming Skills

Languages: C++, C, C#, Python, Java, R/RStudio, HTML/CSS, Javascript, SQL, LaTeX, Bash Script

Technologies: Linux, Git, nano, nvim, MacOS, Windows, JIRA, Agile, Docker, Dynatrace, .NET, Tableau

Libraries & Tools: CMake, Numpy, Pandas, Matplotlib, Jupyter Notebook, NLTK, JSON, Pytorch

Technical Experience

Software Engineer Intern May. 2024 - Current
United Wholesale Mortgage *Pontiac, MI*
- Piloting a change insights **datamart** in **C#** & **SQL** to analyze code base changes & production issues in **Python**
- Launching **Python** model with risk & underwriting to predict loan errors, saving projected **$500,000** annually
- Migrating to Google Cloud Platforming services, writing **Python** & **SQL** scripts to monitor & flag GCP overuse

Web Developer Oct. 2023 – Apr. 2024
The Michigan Daily *Ann Arbor, MI*
- Lead error handling & debugging processes, fixing **75+** 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 & http requests, raising engagement length by **10%**

Software Engineer Intern Jun. 2023 – Sept. 2023
Ratna Global Technologies *Newark, CA*
- Spearheaded construction of a **Node** & **React** website used to control a vehicle rental service with 50+ locations
- Built a custom chatbot using open source **OpenAI** that automates customer service requests based on client data

Undergraduate Researcher Assistant Apr. 2023 – Jun. 2023
The Big-DIG Research Lab *Ann Arbor, MI*
- Engineered a custom **Python** sorting system for school ranks & locations from **750+** schools automatically, eliminating manual labour & guiding lab to conclude data analysis & visualization **2 months** ahead of schedule
- Demonstrated a **99.5%** statistical significance test through supplemental simulations & visual aids in **Python**

Undergraduate Researcher Assistant Jan. 2023 – Apr. 2023
London Business School *Remote*
- Leveraged natural language processing using the **NLTK** library in **Python** to extract & input data from **2500+** contracts into a self launched **SQL** database, optimizing data entry, extraction, & accessing by **25%** for lab use
- Determined **90%** significant difference in structure of internal & external contracts through **Tableau** & **R** analysis

Project Experience

GlassNav: Applying object oriented **C++17** & **Micropython** to develop custom smart glasses with image, video & audio capturing features & an integrated AI system to provide responses about the day based on media recorded

SpeakNav: Implementing a text to speech tool in **Python** to listen to class materials walking or in bus, saving time

ChessNav: Innovated a chess evaluation tool in **Python** with **95%** accuracy in comparison to top engines for 2024 Candidates tournament. Integrated Leila & Stockfish to run **parallel** simulations for World Chess Championship analysis

C++ Standard Library: Leveraged **C++20** features to implement & optimize data structures & algorithms in standard library, enhancing code efficiency & maintainability while staying up-to-date with language advancements.

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