

Pranav Varshney

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Education

University of Michigan, Ann Arbor

Aug 2022 - May 2026

B.S, Computer Science & Statistics

- **Courses:** Computer Organization, Computer Theory, Web Systems, Data Structures, Algorithms, Linux Systems, Probability Theory, R, Operating Systems*, Distributed Systems*, Regression Methods*, Bayesian Models*
- **Activities:** Python Teaching Aide, Research & Discovery Scholars, Michigan Hackers, Poker Club, Pickleball

Technical Skills

- **Languages:** C++, C, C#, Python, Java, R, HTML/CSS, Javascript, SQL, LaTeX
- **Technologies:** Linux, Git, MacOS, Windows, Agile, Dynatrace, Sonarqube, MongoDB, NoSQL, .NET, React
- **Interests:** Chess, Hiking, Horseback Riding, Comics, Tennis, Astronomy, Video Games

Professional Experience

Software Engineer Intern | United Wholesale Mortgage

May 2024 - Aug 2024

- Piloted a data **pipeline** in **C# & SQL** to populate a change insights datalake; analyzed code issues in **Python**
- Reengineered databases to migrate to Google Cloud Platform; wrote **Python** scripts to monitor GCP overuse
- Launched **Python** models with risk & underwriting to predict loan errors, saving **\$30,000** in Quarter 3 expenses

Data Science Intern | Outlier

Jan 2024 - May 2024

- Maintained scalable data **pipelines** in **Python & SQL** to support user analytics; pointed **4** areas of improvement
- Constructed visual aids in **Python** highlighting trends in common search queries, improving search algorithm
- Documented **data models & ELT processes** for investors, clarifying technical details for new business strategies

Web Developer | The Michigan Daily

Oct 2023 - May 2024

- Lead error handling & debugging processes, fixing **75+** website errors to make user experience more enjoyable
- Cut down website vulnerabilities by **40%** with team, sustaining site's integrity through user authentication
- Increased website efficiency by **44%** reducing redirects & http requests, raising engagement length by **10%**

Software Engineer Intern | Ratna Global Technologies

Jun 2023 - Sept 2023

- Spearheaded development of **Node & React** webpage used to manage a vehicle rental service with **5+** locations
- Engineered a chatbot using **OpenAI's** open source model, automating customer services based on user needs

Research Assistant | The Big-DIG Research Lab

Apr 2023 - Jun 2023

- Employed a scalable custom priority heap in **Python** to sort **750+** schools, guiding lab to conclude in **2** months
- Demonstrated a **99.5%** statistical significance test through supplemental simulations & visual aids in Python

Research Assistant | London Business School

Jan 2023 - Apr 2023

- Leveraged **Python** to pipe data from **500** contracts into a mimicked SQL database; optimized extraction by **25%**
- Determined **90%** confidence in differences between internal & external contracts through **R** statistical analysis

Project Experience

ChessNav | Python, Stockfish API, Leila API, Multithreading

- Innovated a chess evaluation tool in **Python** with **95% accuracy** in comparison to top engines for 2024 matches
- Incorporated Stockfish and Leila to run **parallel** simulations for November World Chess Championship analysis

GlassNav | C++, Micropython, GroqAI, ArduinoCam, OpenCV, Gmail API

- Applied object oriented **C++ & Micropython** to develop custom smart glasses with video & audio capturing features for an embedded AI system to provide responses about given timeframe based on media recorded
- Introducing scheduler that sends media to people present in media using **image processing & Google's API**

Custom C++ Library | C++20

- Leveraged **C++20** features to implement & optimize data structures & algorithms in standard library, enhancing code efficiency & maintainability while staying up-to-date with language progressions & outperforming the STL

SQL Imitation | C++

- Mimicked a local SQL database, harnessing **C++** function use to customize **RDBMS** functionality via CLI