# Pranav Ponugoti

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## Education

**Georgia Institute of Technology** **January 2025 – Present**
*Master of Science in Computer Science, Specialization in Machine Learning* *Atlanta, GA*

**Virginia Polytechnic Institute and State University** **August 2021 – December 2024**
*Bachelor of Science in Computer Science, Minor in Mathematics* *Blacksburg, VA*

## Experience

**Hume Center @ Virginia Tech** **November 2024 – May 2025**
*Undergraduate Researcher* *Blacksburg, VA*

- Built and tested telescope control software, improving error handling, fault detection, and GUI functionality with PyQt6
- Automated image processing pipeline with Python for tasks like calibration, plate solving, and orbit determination
- Enhanced software architecture by implementing client-daemon communication using RabbitMQ for task automation

**Albertsons Companies, Inc.** **June 2024 – August 2024**
*Software Engineering Intern* *Pleasanton, CA*

- Developed a web application using Python, SQL, JavaScript, and HTML/CSS to automate the enforcement of system-wide project requirements and performance benchmarks before deployment to production
- Integrated SonarQube and Veracode APIs to verify code quality, security, and compliance with industry standards
- Deployed robust code solutions on Kubernetes, boosting efficiency and positively impacting several teams and engineers

**Virginia Tech College of Engineering** **August 2023 – December 2023**
*Undergraduate Researcher* *Blacksburg, VA*

- Collaborated closely with fellow researchers to improve the design and performance of TERRY, a trash-collecting robot
- Utilized Arduino, PyTorch (YOLOv5), and OpenCV to integrate video streaming and computer vision functionality
- Assisted in troubleshooting technical issues and debugging code to ensure flawless operation of robot in field trials

**Digital Cues, Inc.** **April 2023 – August 2023**
*Software Engineering Intern* *Palo Alto, CA*

- Created and documented automation workflows, optimizing processes between various applications and services
- Leveraged Postman to test and validate APIs, ensuring reliability across several endpoints and environments

## Projects

**Toxic Courses** | *TypeScript, JavaScript, SQL, React, Node.js, Docker, Kubernetes*

- Built a web application to compute and display a "Toxic" difficulty rating for VT CS courses using historical grade data
- Developed functionality for CAS authentication, student & advisor comments, and CSV parsing for database updates
- Deployed production environment on Virginia Tech's Kubernetes cluster, enabling secure and scalable access for users

**Personal Server** | *C, Svelte, Docker, Kubernetes, Valgrind*

- Designed a secure web server capable of serving files and handling concurrent client connections on HTTP/1.1 protocol
- Implemented a robust authentication system utilizing JSON Web Tokens for secure access to private server directories
- Integrated support for HTTP range requests to enable efficient MP4 video streaming, ensuring seamless user experience

**Strands Solver** | *Python*

- Developed an app able to automatically access and solve the current daily Strands puzzle from The New York Times
- Applied A* search algorithm with customizable heuristics, optimizing solving strategy for time and number of attempts
- Built support for an offline mode, enabling users to input and solve custom or archived puzzles in a text-based format

**Data Sorter** | *Java, JUnit*

- Implemented a modified Quicksort algorithm to sort binary and ASCII data, concurrently generating runtime statistics
- Created a custom buffer pool with LRU replacement for efficient byte array management and disk I/O operations

## Skills

**Languages:** Python, Java, C, C++, JavaScript, TypeScript, HTML/CSS, SQL, Kotlin, Go, Ruby, R, MATLAB
**Developer Tools:** Git, Linux, Postman, Docker, Kubernetes, VS Code, Eclipse, Android Studio, MongoDB, Cosmos DB
**Frameworks/Libraries:** Node.js, React, Flask, NumPy, Pandas, PyTorch, OpenCV, JUnit