

PRANAV PONUGOTI

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Education

Virginia Polytechnic Institute and State University

August 2021 – December 2024

Bachelor of Science in Computer Science, Minor in Mathematics | GPA: 3.48

Blacksburg, VA

Relevant Coursework: Software Design & Data Structures, Programming in Python, App Development with Docker, Computer Organization, Data Structures & Algorithms, Mobile Software Development, Computer Systems, Comparative Languages, Data & Algorithm Analysis, Artificial Intelligence, Multivariable Calculus, Discrete Math, Applied Combinatorics, Statistics

Experience

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 and streamline the process of ensuring project requirements and performance metrics are met and up to date prior to 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 Research | Field Study

Blacksburg, VA

- Collaborated closely with fellow researchers to improve the design and performance of TERRY, a trash-collecting robot.
- Utilized Arduino, PyTorch, and OpenCV to integrate video streaming capability and computer vision functionality.
- Assisted in troubleshooting technical issues and debugging code to ensure flawless operation of robot in field trials.
- Presented research findings and project updates to stakeholders, including faculty advisors and industry partners.

Digital Cues, Inc.

April 2023 – August 2023

Software Engineering Intern

Remote

- Developed and documented automation workflows, optimizing processes across various applications and services.
- Leveraged Postman to conduct thorough testing and validation of APIs, ensuring reliability and functionality across different endpoints and environments. Explored use of several RESTful APIs, such as Microsoft's Office 365 APIs.

Projects

Portfolio Website | JavaScript, HTML/CSS, React, Git, Docker

- Developed a professional portfolio website, utilizing a streamlined template, to showcase skills, projects, and more.
- Deployed website on GitHub Pages for easy access and visibility. Available at <https://ponugotipranav.github.io>

Personal Server | C, Svelte, Valgrind, Git

- 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.

Threadpool | C, Valgrind, Git

- Engineered a fork-join Threadpool, employing a divide-and-conquer strategy with work-stealing and work-helping.
- Achieved optimal performance, by carefully managing mutual exclusion and atomicity during task handling.
- Conducted rigorous testing using Helgrind and DRD to resolve potential race conditions and synchronization issues.

Strands Solver | Python, Git

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

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, JavaScript, HTML/CSS, Kotlin, SQL, 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