

Varun Ritesh Gandhi

+1 (703) 453-2465 | vgandhi13.github.io/Personal-Website | github.com/vgandhi13
linkedin.com/in/varunriteshgandhi | Amherst, MA

EDUCATION

University of Massachusetts Amherst

Bachelor of Science in Computer Science and Mathematics, minor in Business (GPA: 3.89)

Feb 2021 – 2024

Distinctions: Dean's List Honors, Chancellor's Award Scholarship (\$56,000)

Coursework: Software Engineering, Data Structures, Algorithms, Programming Methodologies, Operating Systems, Artificial Intelligence, Abstract Algebra*, Computer Networks, Discrete Mathematics, Intro. Computer Organization and Architecture*

SKILLS

Languages: Python, JavaScript, Rust, Java, C/C++, HTML, CSS, SQL, TypeScript, Bash

Frameworks and Libraries: React.js, Node.js, Flask, Bootstrap, Django, jQuery, Express.js, Mongoose, Pandas, NumPy

Cloud and Tools: Google Cloud, AWS, Azure, Docker, Git, Rest API, MongoDB, MySQL, Unix/Linux, Agile, CI/CD, Terraform

Certifications: The Complete Web Development Bootcamp (Udemy), Software Engineering Virtual Experience (JP Morgan)

EXPERIENCE

Software Engineering Intern

Adani Group

May 2023 – Aug 2023

- Automated identification of idle resources in Adani's Google cloud infrastructure by developing python scripts leveraging Google cloud APIs, achieving cost reductions of 35%. Architected a MySQL DB to store the data retrieved from the API calls.
- Spearheaded development of a full stack dashboard using React.js and Django REST framework to visualize and analyze the collected data, utilizing Axios for frontend API calls and Django token authentication for secure backend API authentication.
- Created and deployed MySQL and Django containers on a virtual machine, enabling communication via a Docker network.

Software Engineering Apprentice

Duck Creek Technologies

Feb 2023 – May 2023

- Developed a time tracking platform for internal use of 1900+ employees from ground up in an agile team of 9 developers under the guidance of a Sr. SWE at Duck Creek for academic credit as a part of the software engineering course at UMass.
- Constructed the client-side in React.js, implementing methods for large-scale UI components that consumed served JSON.
- Programmed server-side logic of portal using Node.js, Express.js, and Mongoose, and stored employee data in MongoDB.

PROJECTS

UMassConnect – Social Media Website ([Link](#))

React.js, Redux, Node.js, Express.js, MongoDB, HTML/CSS, MUI

- Developed a full stack CRUD application for prospective use of 9,000+ students, providing a centralized platform for curating and delivering highly relevant content related to UMass students' academic pursuits, campus events, clubs, and interests.
- Guaranteed secure communication and access by integrating RESTful APIs authenticating JWT tokens sent on each API call.

Extended XV6 Operating System Kernel

Rust, C, C++, X86 Assembly, Makefile, Unix/Linux, Perl

- Contributing to the open-source UNIX based XV6 OS kernel by replacing the "Round Robin" process scheduler with the CFS scheduler, enhancing process prioritization and fairness aiming to reduce average process wait times by more than 25%.
- Implementing seamless cross-language integration by incorporating Rust components into the existing C codebase leveraging Rust's Foreign Function Interface (FFI) to ensure compatibility with the goal of reducing memory-related bugs.

Binary Buddy Memory Allocator ([Link](#))

C, C++, Makefile, Unix/Linux

- Created a memory allocator for Unix-like operating systems from scratch which made the use of recursive binary splitting and coalescing to achieve a memory allocation efficiency improvement of approx. 25% as compared to traditional methods.
- Designed a Binary Tree ADT and implemented recursive Depth First Search algorithms to locate available memory nodes.
- Improved build processes by incorporating a Makefile for automated compilation and testing, reducing deploy time by 5%.

The Simon Game ([Link](#))

HTML, CSS, JavaScript, jQuery, DOM

- Developed a single player memory game requiring players to accurately recall and select next color that flashes on screen.

LEADERSHIP & EXTRACURRICULAR

Manning CICS – Undergrad Teaching Assistant – Grade Assignments for the Operating Systems course and hold office hours.

Microsoft – Tech Resilience Program Participant – Paired with two engineers at Microsoft in a 6-week mentorship program.

UMass Residential Life – Peer Mentor – Build inclusive environment for freshmen, aiding academic transition to college.