HARSHIT JAIN

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EDUCATION

The Pennsylvania State University, University Park PA Aug 2021 - Dec 2024 (Expected)
Bachelor of Science in Computer Science | Minor in Mathematics
GPA: 3.68/4.0 | Dean's List (All Semesters) | Recipient of The President Walker Award | Webmaster @ NDL | RA
Relevant Coursework: Data Structures & Algorithms, Systems Programming, Artificial Intelligence, Programming Language Concepts, Programming and Computation II: Data Structures (in Python), OOP with Web-based Applications (in Java), CodePath: (Intermediate + Advanced) Software Engineering, Linear Programming, Discrete Mathematics

SKILLS

Programming Languages: Python, JavaScript, C/C++, Java, HTML/CSS, MATLAB, Verilog, Assembly (64/32-bit x86)
Softwares: Visual Studio, Microsoft SQL Server, MySQL Database System, Linux/UNIX, Postman, Bitbucket, JIRA
Frameworks & Tools: GoLang, Node.js, React.js, RESTful APIs, LaTeX, Git, Agile (Scrum) Methodology

WORK EXPERIENCE

Software Engineering Co-op May 2023 - Present
VIAVI Solutions Inc. *Germantown, MD*

- Developing and implementing an automated test suite in Python using Linux systems for the EGR 2.0 instrument, utilizing SCPI commands to ensure efficient and accurate testing of instrument functionalities, performance, and compliance
- Upgrading multiple firmware for each block in PNT 6220 unit, ensuring compliance with business requirements
- Coordinated automation and security practices to support an Agile Development Engineering environment utilizing Scrum
- Utilized: Python, C/C++, SCPI Protocol, Bitbucket, Git, Agile, JIRA, Office 365

Software Engineering Intern - Research Associate May 2022 - May 2023
Materials Research Institute (MRI), The Pennsylvania State University *University Park, PA*

- Implemented front-end architecture using React.js to design 50+ latest user-facing features in 20+ REACT components with 100% accuracy (tested using JEST), built reusable components, and front-end libraries for continuous development
- Saved weeks of development efforts by integrating leverageable modular code by using popular REACT libraries such as Material UI, improving the efficiency by approximately 40%
- Integrated MS SQL Server relational database which currently deals with 500+ instruments and 18+ tables
- Developed and tested Python scripts automating the process to retrieve data from various sources, manipulate and analyze the data, filter out irrelevant data, look up similar data in the server, import it into the server, and handle errors gracefully
- Developed a Python library for the Raman Fitting model, to perform deconvolution on Raman spectra, and enable interactive preprocessing, effective fitting, and export of data files, reducing analysis time by 40%
- Utilized: Python, JavaScript, React.js, Node.js, MS SQL Server, RESTful APIs, Git, HTML/CSS, JIRA, Office 365

PROJECT EXPERIENCE

`mdadm` Linear Device (Try it here) Feb 2023 - May 2023

- Developed `mdadm` tool in *C* for managing multiple disks in Linux systems
- Configured 16 disks of size 64 KB as a 1 MB linear device, providing users with a unified address space for data access
- Implemented mount/unmount operations to the linear device, preventing potential data loss and system crashes
- Designed the read/write functions to set up in the linear device, providing users with comprehensive data access capabilities
- Implemented caching feature which significantly enhances system latency and reduces the load on the JBOD
- Added JBOD Networking feature to enable communication with JBOD servers over the network and allow seamlessly switching to alternative JBOD systems in case of malfunctions

Course Scheduler (Try it here) Oct 2022 - Dec 2022

- Developed the application using Java and SQL to allow students and educators to manage their course schedules, including setting up semesters, adding courses, and new students
- Designed the Derby Database to store and organize the data, and wrote several SQL queries to facilitate tasks such as adding and dropping courses, and managing the waitlist process

Library Management System (Try it here) Nov 2021 - Dec 2021

- Built a Python-based professional library management system that streamlines basic and advanced tasks in a library setting; the system passed tests on 500+ library logs
- Developed multiple features and functions for the system, including:
  - Checks the eligibility of students to borrow books on a particular day for a certain number of days
  - Finds the book that has the highest borrowing ratio
  - Produces a sorted list of the most borrowed books (books with the highest usage ratio)
  - Calculates the pending fines at the end of the log and on a specific day in the log