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: 3.7/4.0 | Dean's List (All Semesters) | Recipient of The President Walker Award | Webmaster @ NDL | Resident Assistant
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

TECHNICAL SKILLS

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

WORK EXPERIENCE

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

- Collaborating with the R&D team to design and implement a Python-based automated test suite on Linux systems for the EGR 2.0 (instrument), ensuring comprehensive test coverage and compliance with the SCPI protocol
- Debugged PNT-62xx unit's source code in C, resulting in a 30% reduction in bugs and a 20% increase in code coverage
- Upgrading multiple firmware for blocks in 3x PNT-6250 Rubidium units, 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, Confluence, 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 during a team sprint by integrating leverageable modular code by using the 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 and completely automated 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

HiLite: AI AutoHighlighter (Try it here) Mar 2023 - May 2023

- Designed and implemented an AI system that automatically identifies and summarizes text using LSTM networks
- Created LSTM-based Encoder and Decoder to create a robust text summarization solution
- Trained the model on the training set, using the validation set to monitor its performance and prevent overfitting
- Utilized Python, Flask, and React.js for the implementation, ensuring a seamless and user-friendly interface

`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 seamless switching to alternative JBOD systems in case of malfunctions

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