Shouvik Majumder

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Education

The Pennsylvania State University Aug 2022 – May 2026
Bachelor of Science in Computer Science *University Park, PA*

Relevant Coursework: Programming and Computation I - II, Object Oriented Programming, Intro to Systems Programming, Computer Engineering and Digital Design: Theory and Practice, Calculus I - III, Linear Algebra, Discrete Mathematics, Data Structures and Algorithms, Computer Organization And Design

Technical Skills

Programming: Python, Java, JavaScript, C, R, HTML, CSS, Node.js, Express.js, React.js, Verilog
Tools: Visual Studio Code, Netbeans, QT Designer, Jupyter Notebooks, Git, Linux/Unix, Unity, Vivado

Work Experience

Teaching Assistant Aug 2024 – Present
The Pennsylvania State University *University Park, PA*

- Graded assignments, quizzes, and exams for a **Linear Algebra (MATH 220)** course with **100+ students**
- Providing detailed feedback on **600+** student submissions, enhancing clarity and understanding of course material

Research Assistant May 2024 – Present
The Pennsylvania State University *University Park, PA*

- Conducting literature searches on **1000+** articles using 3 scholarly databases (**PubMed, Web of Science, and SSRN**) to retrieve and archive articles related to biotechnology, aiding in the research team's analysis
- Enhancing data reliability by verifying **170+** findings through cross-referencing multiple sources, ensuring the reliability of the collected data for ongoing research

Software Engineer Intern May 2024 – Aug 2024
The Pennsylvania State University *University Park, PA*

- Developed a **Python** application using **QT Designer**, **obspy**, and **daspy** data structures to process and visualize data from **2,000+ fiber optic sensor channels**, aiding geophysicists in analyzing seismic events
- Implemented a frequency analysis feature that generates 3 critical graphs, displaying raw data, dominating and average frequencies across all channels, enhancing data interpretation process for geophysicists
- Integrated a Bandpass filter option within the interface to isolate and analyze specific signals, resulting in a **25%** increase in the precision of geohazard readings

Statistical Programming Intern June 2024 – Aug 2024
The Pennsylvania State University *University Park, PA*

- Utilized **R** to import, clean, and analyze survey data from **200+ physicians** and **50+ medical students** on the **AI in Clinical Workflow** project to assess AI's impact on the medical field.
- Generated **40+** statistical reports from the cleaned data, contributing to the project's comprehensive analysis of AIs' influence on clinical practices
- Increased data processing efficiency by **30%** through automating data cleaning tasks using **R, dplyr,** and **tidyr**

Projects

Movie Recommendation System | *Python, Scikit-learn, Pandas, JupyterLab*

- Developed a movie recommendation system in JupyterLab using Python (Pandas, Scikit-learn) to manage an IMDB dataset of **500+** movies, utilizing TF-IDF vectorization for natural language processing

AI Image Generation App | *MongoDB, Express.js, React.js, Node.js*

- Developed a full-stack AI Image Generation App using the MERN stack (MongoDB, Express.js, React.js, Node.js) with **20+** modular React components, integrating OpenAIs DALL-E model to generate high-quality images based on dynamic user input