Progga Paromita Dutta

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EDUCATION

Stony Brook University Stony Brook, NY
Bachelor of Science with Honors: Computer Science December 2024
Applied Mathematics and Statistics (2nd major)
GPA: 3.71, Dean's list, 2022 (Spring, Fall) -2024 (Spring)
Related Coursework: Software Development, Analysis of Algorithm, Machine learning, Fundamentals of Computer Vision, System Fundamentals, Programming Abstractions, Data Analysis, Data Structures, Object-Oriented Programming

SKILLS

- **Programming:** Python (Numpy, Pandas, OpenCv, TensorFlow, Pytorch), HTML/CSS, JavaScript, Java, C
- **Database Technologies:** MongoDB, SQL
- **Front-End Development:** React
- **Back-End Development**: Node.js
- **Software & Tools:** Git, GitHub, Google Workspace, Microsoft Office, Eclipse, Visual Studio, LaTex
- **Statistical Analysis:** R**,** SAS

EXPERIENCE

Evolv Technology Waltham, MA
Computer Vision Engineer Intern, Advanced Threat Detection Team *June 2024- Present*

- Developing and implementing a robust algorithm to address and diminish a challenging problem in their existing weapon detection product, ensuring seamless integration into the current feature set.
- Collaborating with ATD (Advanced threat detection) team to analyze, test, and refine the algorithm, resulting in improved system performance and reliability.
- Created and deployed a script to process millions of images, adding them to an image database for pre-annotation to identify specific items from the images by optimizing the script to reduce processing time for different functions using profiling techniques, significantly improving overall performance.

Computer Science Department, Stony Brook University Stony Brook, NY
Undergraduate Research Assistant, Computer Vision Lab *May 2023 – May 2024*

- Collaborated with a team on a human gaze prediction project using multi-camera setups; contribute to data collection, precise annotation, and enhancement of machine learning model accuracy.
- Engaged in team meetings and discussions, sharing progress and ideas, and providing feedback, with a strong focus on detail, accuracy, and adherence to research protocols.

Computer Science Department, Stony Brook University Stony Brook, NY
Undergraduate Teaching Assistant, Foundations of Computer Science *August 2022 - December 2022*

- Mentored students during office hours and led weekly practical problem-solving sessions for groups of 30 students.
- Assisted with classroom management and oversight during examinations in collaboration with the professor.

PROJECTS

Communication Board Development - Full Face Appearance Based Eye Gaze Estimation| Python, MediaPipe - Conducting research to develop a communication board for cerebral palsy people using facial feature extraction for eye gaze estimation, implementing advanced machine learning models for real-time interaction.

The Hospital Project - Process Management Tool | React, MongoDB, Node.js, Express - Developed a Process Management Tool for different departments to enhance efficiency by managing procedures, resources, and staff assignments by implementing features for accounts management, resource management, equipment/room management, procedure management, and process participation, enabling dynamic decision-making and notifications for caregivers.

Fake Stack Overflow Application | React, MongoDB, Node.js, Express, bcrypt - Engineered a Stack Overflow-inspired application with React for the frontend and Node.js/Express for the backend, integrating MongoDB for data management and bcrypt for secure authentication and translated user stories into a responsive UI and efficient server-side routing.

Homography Estimation and image Warping| Python, OpenCv- Implemented advanced computer vision techniques for image alignment and stitching producing a seamless image mosaic that simulates panoramic photography using feature matching algorithms and Random Sample Consensus (RANSAC) for robust homography estimation.

Neural Network Framework| Python, Numpy- Developed a versatile neural network framework, enabling model training for classification and regression with dynamic architectures activation functions, and optimized loss computations.