Shivanshu Agarwal

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github.com/Summation1

Technical Skills

Languages: C++ (OOP), Python, Java, C, HTML/CSS, JavaScript, SQL, Machine Learning.
Developer Tools: VS Code, PyCharm, GitHub.
Core: Object-Oriented Programming (OOP), Data Structures and Algorithms, Database Management,Operating System(OS).

Experience/Projects

Face Recognition Attendance System | *Python, Machine Learning* **July 2024**

- Engineered a face recognition attendance system utilizing Python, enabling automated check-ins based on real-time face detection and recognition, which reduced manual entry errors by 90% and improved attendance tracking efficiency by 75%.
- Integrated OpenCV for image processing and employed machine learning algorithms for efficient and accurate face recognition, achieving an accuracy rate exceeding 95%.
- Designed an intuitive user interface and incorporated database storage for attendance records, enhancing usability and reliability while supporting over 500 users.

Speech Emotion Recognition System | *Python, Machine Learning* **November 2024**

- Engineered a speech emotion recognition system capable of classifying emotions such as happy, sad, and angry using real-time audio input, with a processing speed of 1.2 seconds per prediction.
- Achieved an accuracy of 88% on test data comprising over 2,500 samples from RAVDESS and SAVEE datasets, ensuring reliable emotion classification.
- Extracted MFCC features from over 10,000 audio segments and optimized a CNN model with 20% faster convergence, reducing model error rate by 15%.
- Integrated real-time prediction with a user-friendly interface, handling up to 50 simultaneous inputs, enabling applications in mental health monitoring and interactive AI systems.

Big Integer Arithmetic Library | *C Language, Makefile* **January 2024**

- Developed a high-performance library in C for performing arithmetic operations on large integers, supporting functions such as addition, subtraction, and multiplication for integers up to 100,000 digits.
- Implemented efficient data structures and algorithms to handle arbitrary-length integer operations without standard library support, enhancing processing speed by 40%.
- Created a Makefile to manage builds and dependencies, ensuring seamless compilation and integration into larger C projects, which reduced build time by 30%.
- Constructed comprehensive unit tests for critical components of the library, verifying code reliability with over 30 specific test cases addressing edge scenarios prior to deployment.

Achievements / Extracurricular

Achievements **September 2022 – Present**

- Spearheaded a team in a hackathon involving over 200 teams, securing 3rd place and earning recognition from faculty and peers.
- Received accolades for winning 3 competitions, significantly enhancing overall team performance and morale.
- Participated in 10+ workshops and seminars, enhancing expertise in software development and project management,

Volunteer Experience

- Facilitated five successful college events, directly impacting over 300 students by enhancing participation strategies and fostering collaboration; strengthened community ties and created lasting connections among attendees.

Education

Graphic Era Hill University **Dehradun, India**
Bachelor of Technology in Computer Science *August 2022 – Present*
CGPA: 8.14 / 10
Relevant Coursework: Data Structures, Algorithms, Software Engineering, Machine Learning, Database Management Systems, Web Development, Operating Systems

S.G.S.V.M.I.C **Dehradun, India**
Senior Secondary *June 2021*
Percentage: 81.8 / 100