Harsh Singh

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Education

Manipal institute of technology Expected May 2025
Bachelor of Computer Science - Artificial Intelligence (Minor Specialization – AI in Healthcare) *Bengaluru, Karnataka*
(CGPA: 8.32 / 10)

- **Relevant Coursework:** DSA (C++), DBMS (SQL), Statistics (R), Computer Vision, ML/DL (Python), Natural Language Processing

Experience

Bhabha Atomic Research Centre (BARC) 05/2024 – 07/2024
Intern *Mumbai, Maharashtra*

- Focused on advancing gamma ray spectroscopy techniques using convolution Variational Autoencoders (CVAE).
- Conducted hands-on experimentation and data analysis to enhance spectral analysis accuracy.
- Developed a fine tuned Machine Learning model to detect peak location in the NaI(Tl) detector spectrum.

Straive - LearningMate 10/2023 – 01/2024
Chegg Expert *Online*

- Provided assistance to students worldwide in solving problems of probability and statistics.
- Delivered clear explanations and step-by-step solutions to enhance student's understanding.
- Actively contributed to Chegg's online community forums, sharing insights and best practices for collaborative learning.

Boston IT 06/2023 – 07/2023
Intern *Bengaluru, Karnataka*

- Collaborated with a team to analyse WAF logs and fine-tune rule sets for optimal security..
- Deployed web application security enhancements that mitigated common vulnerabilities like SQL injection and cross-site scripting; reducing potential cyber threats.

Projects

Metallographic Image Processing | *OpenCV, Python*

- Executed a research paper on adaptive filtering approach utilizing weighted mean for metallographic image enhancement; achieved a 25% increase in image clarity and a 20% reduction in noise levels.
- Used Adaptive Mean filter i.e. 3x3, 5x5, 7x7 masks to calculate weights.
- Combined mean and median filtering techniques to adjust filtering parameters, enhancing noise reduction while preserving image details.

Face Recognition System | *TensorFlow, PyTorch, Keras, Haar Cascades, Sklearn*

- Developed a face recognition system using OpenCV and deep learning techniques, resulting in a 98% identification accuracy
- Utilized pre-trained model for face detection and feature extraction.
- Deployed the OpenFace model to extract facial embeddings, enabling robust representation of facial features.

E-commerce Platform | *HTML, CSS, JQuery, React.js, Node.js, MongoDB, Express*

- Led and developed a scalable e-commerce platform using Node.js, React, Express, and MongoDB, from conceptualization to implementation.
- Enforced responsive design principles for optimal user experience across various devices.

Technical Skills

Languages: HTML, CSS, JavaScript, Python, Java, C++, PHP, R, SQL
Technologies: TensorFlow, Keras, PyTorch, Scikit-Learn, OpenCV, Django, Flask, C sharp, Bootstrap, Node.js, React.js, Express, MongoDB, jQuery, ASP.NET, Android SDK, Unreal
Concepts: Object-Oriented Programming (OOP), Functional Programming, Web Application Firewall, Data Structures Algorithms, Artificial Intelligence, Machine Learning, Neural Networks, Deep Learning, Natural Language Processing, Agile Methodology, Internet Technologies, IoT