Harsh Sanjay Rathi

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PROFILE

Portfolio Click here

Dedicated in AI with a solid background in machine learning, data analysis, and model optimization. Experienced in designing and implementing intelligent algorithms that solve complex problems across various domains. Passionate about leveraging AI to drive innovation and improve decision-making processes, with a strong commitment to ethical AI development.

EDUCATION & QUALIFICATIONS

University Of Adelaide - Master`s degree Artificial Intelligence   2025

Currently pursuing a Master of Artificial Intelligence at the University of Adelaide, with a focus on advanced machine learning, deep learning, and data-driven AI methodologies. Engaged in cutting-edge research and practical projects that explore the ethical and innovative applications of AI across various industries. Committed to gaining expertise in developing intelligent systems that solve real-world challenges and contribute to the future of AI technology.

Babasaheb Ambedkar Technical University - Bachelor`s degree Instrumentation   2022

Completed a Bachelor's degree in Instrumentation Engineering from Babasaheb Ambedkar Technological University, with a strong foundation in automation, control systems, and sensor technology. Developed practical skills in designing and implementing instrumentation systems for various industrial applications. This academic experience has provided a solid technical background, paving the way for advanced studies and a career in Artificial Intelligence

Sanjay Ghodawat Polytechnic - Diploma Mechanical Engineering   2019

Earned a Diploma in Mechanical Engineering from Sanjay Ghodawat Polytechnic, where I gained hands-on experience in mechanical systems, manufacturing processes, and engineering design. This diploma provided a solid technical foundation, equipping me with practical skills in problem-solving and project management, which have been instrumental in my subsequent studies and specialization in Artificial Intelligence.

PROJECTS:

Image Classification: I am currently working on an innovative project at the University of Adelaide, focusing on Osteoarthritis (OA) Detection using Computer Vision. The project explores the use of Vision Transformers (VIT's) to analyse joint MRI scans for early-stage detection and classification of OA. As an AI researcher, I am passionate about leveraging Machine Learning and Deep Learning to tackle real-world problems, and this project is a perfect example of how AI can transform the healthcare industry. By improving diagnostic capabilities, we're aiming to make a significant impact on early detection and treatment.

Species Classification: VGG16 vs REsNet152: Researched into Convolutional Neural Network with 100 different types of bird classification with two comparative models VGG16 and REsNet152. Architecture of REsNet152 is more complex and efficient in terms of performance.

Sentimental analysis Architecture: dived into NLP (Natural Language Processing) with a profound understanding on sentimental analysis and a full architecture to divide contextual text in positive and negative sentiments.

Question Answer (QA) System: Deeper in NLP, with a curiosity of how Chat GPT works, I studied a Question Answer Based System Which Solves User queries with an input set of articles. Learned how TfidfVectorizer converts words to numbers, and how cosine similarity calculates the similarity score of question to the answer.

Stock price prediction Using LSTM: Tried to predict Nifty50 stock prices using various models and hyperparameters. Where I found out that LSTM (Long Short - Term Memory) with four layers and hyperparameter optimization gave the highest R Square value which was 0.89

Breast Cancer detection: In the series of classification tasks, I learned how to fine tune the predictive models with gridsearch and apply decision boundaries. Various models were compared to each other, and the best model was fine-tuned more for higher accuracy. Ended up having 0.93 R Square.

Recommendation System: Developed a personalized recommendation system using collaborative filtering (user-based and item-based) with cosine similarity and Pearson correlation. Applied Singular Value Decomposition (SVD) for dimensionality reduction. Evaluated performance with precision, recall, and F1-score to ensure recommendation accuracy.

ADDITIONAL INFORMATION

Languages – English, Hindi, Marathi, Gujrati,

Technical skills

Languages: Python, Java (Basics), HTML.

Scientific Tools: TensorFlow, Keras, Sklearn, Pandas, NumPy, NLTK (NLP Library) Developer Tools: GIT, VS Code, Google Colab, Terminal

INTERESTS

Soccer: Enjoy playing in local leagues and staying active with team sports.
Badminton: Regularly participate in badminton matches, honing reflexes and strategic thinking.
Swimming: Passionate about swimming for both fitness and relaxation.
Gym: Committed to maintaining physical fitness through regular gym workouts.
Cricket: Enthusiastic about playing and following cricket, appreciating the strategy and teamwork involved.