

Pranav Singh Mahara

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Education

Vellore Institute of Technology, Vellore

Vellore, Tamil Nadu

Bachelor of Technology in Computer Science with Specialization in Business Systems

2021 - 2025

- GPA- 9.05/10
- Data Mining and Analytics, Artificial Intelligence, Computational Statistics, Linear Algebra and Complex Variables, Discrete Mathematics, Data Structures and Algorithms, Operating Systems, Modern Web Applications.

Research Papers and Projects

AI inspired Smart vehicular pollution characterization over busy street junctions

June 2024 - present

- Conducted research with a 4-stroke diesel engine to simulate real-world conditions, analyzing particulate matter emissions and developing a predictive AI model for real-time diesel emission monitoring in urban environments.
- Utilized advanced imaging and Convolutional Neural Networks to quantify particulate size distribution from smoke emissions, creating a framework for environmental monitoring and regulatory compliance in diesel-dependent regions.

Unified approach integrating Machine Learning algorithms for detection of e-mail phishing attacks

August 2023 – Feb 2024

IEEE International Conference on Computing, Sciences and Communications (ICCSC)

- Implemented a novel ensemble approach utilizing three machine learning algorithms to detect email phishing, leveraging a real-time dataset of approximately 13,000 entries from Kaggle.
- Achieved an accuracy of 98.2%, demonstrating proficiency in model optimization and advanced data analytics techniques.

Integrating Multimodal Deep Learning for Enhanced News Sentiment Analysis and Market

January 2024 – May 2024

Movement Forecasting International Journal of Innovative Science and Research Technology (IJISRT)

- Developed a multimodal deep learning framework that integrates natural language processing and auxiliary data to enhance news sentiment analysis and market forecasting, achieving 77.51% accuracy.
- Utilized a hybrid architecture with CNNs, LSTMs, and attention mechanisms, employing advanced data augmentation to capture complex market dynamics and improve predictive robustness.

Fault Detection in Inverters using Hybrid Deep Learning Algorithms

April 2024 – September 2024

- Created a hybrid fault detection model for inverters, integrating deep learning feature extraction with Random Forest classification, achieving 94.17% accuracy and enhancing predictive reliability.
- Employed advanced preprocessing, including PCA for dimensionality reduction, to optimize computational efficiency and ensure robust classification of faults, addressing operational safety challenges in inverter systems.

VIT Bay

September 2023 – December 2024

- Developed a comprehensive e-commerce platform tailored for college students, inspired by eBay, that streamlines the buying and selling process for a wide range of products.
- Leveraged my expertise in web development and user experience design to create an intuitive interface and implement features that enhance functionality and engagement.

Professional Experience

Samsung R&D Bangalore

Bangalore, India

Research and Development Intern

Feb 2024 – May 2024

- Engaged in R&D for Gen AI, focusing on developing and optimizing Multilingual Large Language Models (LLMs) using the AI4Bharat Transformer Model for accurate translation of Indian Languages for its usage in Samsung products to be sold in India.
- Conducting comprehensive evaluations and dataset analyses to enhance model performance and address challenges in translating diverse Indian dialects.

School of Computing, National University of Singapore

Singapore, Singapore

Deep Learning Research Intern

December 2023 – January 2024

- Headed a pivotal research project specializing in Big Data Analytics with a focus on Deep Learning to improve venture capital decisions for startup funding by incorporating various crucial factors.

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- Led a data-driven approach in reshaping VC decision-making under the Project guides: Dr. TAN Wee Kek (Associate Professor and Asst. Dean NUS) and Dr Manoranjan Dash (Sr. Data Scientist NUS)

The Opportunities Portal Head of Business Strategy

Vellore, India
Aug 2022 – Sep 2023

- Developed a campus-centric portal connecting skilled students with startups and project leaders, facilitating collaboration on research, projects, and hackathons to foster job opportunities and partnerships.
- Successfully accepted in Y Combinator Startup School Phase-I, where I helped ideate and launch the platform to streamline engagement and transparency between students and entrepreneurial initiatives on campus.

Collab Junction Data Analytics and Research Intern

Ahmedabad, India
2024 – present

- Monitored and visualized key performance indicators (KPIs) of a website attracting 5000+ monthly visitors such as sponsor engagement, event reach, and sponsorship trends, resulting in a 22% increase in sponsor sign-ups.
- Enhanced expertise in advanced data visualization techniques and trend analysis, enabling data-driven strategic insights to optimize stakeholder engagement and improve organizational outcomes in the field of data analytics.

Additional Information

- Executive Data Science | Johns Hopkins University June 2023 - August 22, 2023
Completed the Executive Data Science program, gaining expertise in data analysis, team leadership, and real-world application of data science techniques. Developed skills in managing data-driven projects and assembling effective data science teams for organizational success.
- AIML Externship | SmartInternz Powered by Google Developers August 2023 – November 2024
Collaborated on a machine learning-based fraud detection system for online payments, employing feature engineering and data normalization for preprocessing. Led the training of models like logistic regression and random forests with cross-validation to optimize performance and ensure real-time adaptive learning against evolving fraud patterns.
- Research Executive, Entrepreneurship Cell June 2022 – January 2024
Led comprehensive market research and analysis to drive college initiatives and support the growth of startups, positively impacting over 1,000 university students passionate about entrepreneurship and leadership. Mentored aspiring entrepreneurs and provided strategic insights, playing a pivotal role in fostering a vibrant startup community and enhancing the club's initiatives.
- Ashwaunilife
Actively participated in the Education vertical of an Ashwaunilife, promoting customized and flexible learning programs tailored to individual needs, while fostering collaboration and critical thinking among students through community-building activities. Advocated for the integration of technology and digital resources in education, enhancing learning experiences and student engagement through innovative teaching methods.
- Special Guest Care Coordinator at Riviera
Served as the Coordinator of the most crucial organizing committee of VIT's cultural fest Riviera '24, which had a footfall of over 20,000 attendees. Led transportation negotiations and logistics for special guests and artists, ensuring seamless coordination and execution of event requirements.
- Runner-up at Futurepreneurs 8.0, E-Cell, VIT, Vellore which is a Hackathon, with over 1500 participants, that scrutinizes business strategies, challenging ideas and situations resembling real-life conundrums to test the management and decision-making skills of the participants
- Winner, Code Run Seek 4.0, IEEE-IAS Sep 2022, a multi-round 3-day multi-round Hackathon focused on computer science and programming challenges. Leveraged strong analytical skills and technical expertise to excel in diverse quizzes and problem-solving tasks, fostering innovation and collaboration within the team.