NAMAN DHARIWAL

Data Scientist & Machine Learning Engineer

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EDUCATION

University of Michigan, College of LSA, Dept. of Statistics **Ann Arbor, USA**
Master of Science in Data Science | CGPA: 3.88/4.0 *Expected 2025*

VIT University, School of Computer Science and Engineering **Vellore, India**
B. Tech in Computer Science and Engineering | CGPA: 9.1/10 *2024*

TECHNICAL SKILLS

Data Science & AI: Deep Learning, Machine Learning, Natural Language Processing, Computer Vision, TinyML, Big Data Analytics, Statistical Analysis, Mathematical Modelling, Signal Processing
Research Expertise: Oncology, Healthcare, Mortality Predictions, ML and Analytics, Regression Models, Latex, Word
Statistical Software: Python, R, MATLAB, Excel
Database/Servers: MySQL, Oracle LiveSQL, Cloud Computing

WORK EXPERIENCE

Artificial Intelligence Application Fellow – Center of Academic Innovation, University of Michigan 2024 – Present
- Constructed a dataset from the proprietary database and augmented it with ChatGPT, growing data volume by 28%.
- Fine-tuned LLM with the proprietary dataset to classify course videos, saving 40% of the dataset annotation cost.
- Integrated cutting-edge vision foundation models into the existing LLM, improving recommendation quality by 20%.

Secretary/Research Associate - College of Pharmacy, University of Michigan 2024 – Present
- Optimized academic resources by integrating the latest approved pharmaceutical policies for 90+ students.
- Researched, analysed and maintained records of 52 pharmacological clinical trials for clinical studies.
- Managed and proof-read real-world survey forms to ensure compliance before distribution to patients.

PUBLISHED ORIGINAL RESEARCH

"A Pilot Study on AI-driven Approaches for Classification of Mental Health Disorders" - *Frontiers in Human Neuroscience - Brain-Computer Interfaces* | **2024**
- First Author; Identified and quantised correlation between neuro-disorders and addictions with 99.79% accuracy & <1% error.

"An Artificial Intelligence Based Approach Toward Predicting Mortality in Head and Neck Cancer Patients with Relation to Smoking and Clinical Data " - *IEEE Access* | **2023**
- First Author; Engineered advanced XGBoost model predicting mortality with 98.8% accuracy & high recall in HNC patients.

"Audio and Text Sentiment Analysis of Radio Broadcasts" - *IEEE Access* | **2023**
- First Author; Researched on combined results from audio and text sentiment analysis of 46 days of radio broadcasts to identify distress or oppression.

"Brain Metastasis Origin and Patient Mortality Predictions Using MRI with Clinical and Imaging Feature Information by Deep Learning Architectures " - *IEEE - INOCON* | **2024**
- Sole Author; Researched and identified the origin of metastasis with 97.12% accuracy; Predicted mortality with 99.5% accuracy by engineering a tuned Recurrent Neural Network.

"Using Machine Learning Regression Model to Predict the Optimum Election Algorithm for Parallel and Distributed Computing Systems" - *IEEE - STCR* | **2023**
- Sole Author; Engineered a regression model to predicted the optimum election algorithm with 94.98% accuracy.

"Voice Stimulated Inclusive Multiplayer Game Development with Speaker Recognition" - *IEEE - STCR* | **2023**
- Co-Author; Engineered an inclusive gaming experience using simultaneous voice recognition technology for the impaired.

START-UP AND PROJECTS

Chief Executive - A-EYE (*Startup under Incubation*) 2023 – Present
- Engineering an AI based assistive wearable product to assist the visually impaired.
- Designed & assembled the 1st prototype by integrating computer vision algorithms, micro-computer, camera and peripherals.
- Secured INR 160,000 funding to patent (pending) the product.

Chief Engineer - Elderly Fall Detection Wearable (*Startup under Incubation*) 2022 - 2024
- Programmed and deployed CNN on a microcontroller module for fall detection in the elderly with 96% accuracy
- Engineered the first functioning prototype and designed the custom PCB (under manufacturing) - Secured SEED funding.

Machine Learning Engineer - CPR Quality Assurance and Real-Time Feedback System 2023 - 2024
- Secured SEED funding of INR 200,000 for research and development
- Programmed the XGBoost architecture that interprets the electromyographic signals to predict quality with 99.8% accuracy.
- Simulated real-world CPR on manikin to evaluate system performance.

Multi-Lung Disease Classification Web Application 2022
- Applied ensemble learning across multiple CNNs to classify lung diseases using chest X-ray images with 98% accuracy.
- Programmed a web application that hosts the model, making it available to labs.

ORIGINAL RESEARCH – UNDER REVIEW

"On Distance and Vertex-Degree Based Topological Indices of Product of Digraphs" 2022
Co-Author; Calculated indices of digraphs and graph products, detected patterns, and extracted theorems.

"Analysis Of Quality of Automated CPR And Patient Response to Deliver Effective CPR" 2023
Co-Author; evaluated the efficiency and quality of automated CPR through patient response analysis.

LEADERSHIP, VOLUNTEER & SOCIAL IMPACT EXPERIENCE

SETU Society - Community Technical Education Initiative 2019 – Present
- Established 3 computer centers with SETU-Society, offering free technical education to underprivileged communities
- Established a training center for women in urban slums & rural areas.

SETU-Society - **Food Center Volunteer** 2020 – 2021
- Managed the distribution of hundreds of meals daily to support the underprivileged during the pandemic
- Designed informative posters to promote safety precautions among beneficiaries.

Social Media Outreach for Women Empowerment 2021 – 2022
- Produced & promoted women empowerment videos for social media, elevating the organization's digital presence & outreach.

ACCOLADES, PROFESSIONAL INVOLVEMENT, AND ADDITIONAL ACHIEVEMENTS

Student Startup Venture Funds Awardee – INR 160,000	2024
Raman Research Award	2023, 2023, 2024
IEEE Access Reviewer	2023 - Present
Student Member of IEEE	2023 - Present
Best Student Council Award	2016

ADDITIONAL SKILLS

Fluent Languages: English, Hindi
Management: Operations Management, Lean Start-up Management
Mechanical Engineering: Engineering Drawing, Manufacturing Processes
Videography and Filming: Video Editing: Adobe Premiere Pro, Shotcut