Naman Dhariwal

Data Scientist & Machine Learning Engineer
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PROFESSIONAL SUMMARY

Data Scientist and Machine Learning Engineer with 3+ years of experience developing AI/ML solutions for healthcare, education, and research applications. Expert in Python, advanced ML frameworks and MLOps, with a proven track record of deploying production AI models. Published researcher in medical data analysis, NLP, and computer vision with 8+ peer-reviewed publications.

EDUCATION

University of Michigan — **Ann Arbor, USA**
Masters of Science in Data Science | GPA:3.75/4.0 — *Dec 2025*

VIT University — **Vellore, India**
Bachelors of Technology in Computer Science and Engineering | GPA:9.1/10.0 — May *2024*

- *Student Startup Venture Funds Awardee – $1,800* — *Jan 2024*
- *Raman Research Award* — *Nov 2023, Apr 2024*

SKILLS

Machine Learning & AI: Data Science, Deep Learning, Large Language Models, Natural Language Processing, Computer Vision, TinyML, Big Data Analytics, Statistical Analysis, PyTorch, TensorFlow, Mathematical Modeling, ML Libraries, Git.
Research Expertise: Medical Image Analysis, Image Segmentation, Oncology, Healthcare, Mental Health, Prediction and Analytics, Regression Models, LaTex, Qualtrics, IRB Protocols, Wearable Health Monitoring.
Statistical Software: Python, R, MATLAB, Excel.
Database Management: SQL, Cloud Computing, AWS.
Management: Operations Management, Lean Start-up Management, Leading Startup Teams, Healthcare Startups.

WORK EXPERIENCE

School of Kinesiology, University of Michigan — **Ann Arbor, MI**
Machine Learning Engineer — *Nov 2025 – Present*

- Engineering PyTorch-based neural networks for dynamic intrusion prediction on edge devices using Apple Watch sensor data.
- Optimized a personalized on-device MLP using Gurobi-accelerated least squares, achieving 99.8% accuracy on 200K+ samples for adaptive mobility interventions.
- Designed an end-to-end preprocessing and feature engineering pipeline for an IRB-approved hypertension study, supporting 4 cross-functional teams.

Kelsey Museum of Archaeology, University of Michigan — **Ann Arbor, MI**
Data Scientist — *Apr 2025 – Present*

- Developing an automated web scraping pipeline using Python, Scrapy, and Selenium to extract and curate 50,000+ research articles in 3 weeks; integrated OpenAlex API for metadata enrichment, decreasing manual curation time by 80%.
- Built an automated database updating system, enabling keyword-based search capabilities for 6 cross-functional stakeholders.

Center for Academic Innovation, University of Michigan — **Ann Arbor, MI**
Artificial Intelligence Application Fellow — *Oct 2024 – Present*

- Prototyping a scalable AI evaluation platform cataloging 100+ LLMs with a rapid selection interface for researchers.
- Developing LLM-powered course personalization system integrating 10+ models, automating content discovery and reducing manual curation from weeks to hours per course.
- Upgraded proprietary training dataset augmented with ChatGPT-generated examples, expanding data volume by 28%.
- Fine-tuned a domain-specific LLM for automated course video classification, reducing annotation costs by 40%.
- Integrated vision foundation models into multimodal recommendation pipeline, improving content relevance scores by 20%.

College of Pharmacy, University of Michigan — **Ann Arbor, MI**
Research Associate — *Oct 2024 – Mar 2025*

- Maintained research database tracking 52 pharmacological clinical trials, ensuring data integrity for ongoing clinical studies.
- Curated and updated pharmaceutical policy documentation for 90+ graduate students, ensuring regulatory compliance.
- Validated research surveys for a patient-facing IRB approved research, ensuring adherence to research protocols.

RESEARCH EXPERIENCE

"OASIS-SB: A Sex-Balanced, Distribution-Preserving, Synthetic Phenotypic Dataset for Bias-Resilient Clinical Prediction" - *Frontiers in Computational Neuroscience - Sex Bias in Neuroscience* *Jan 2025*

- Sole Author; Modeled a pioneering dataset (N=712) to mitigate sex-bias & improve fairness in dementia prediction AI models.

"A Pilot Study on AI-driven Approaches for Classification of Mental Health Disorders" - *Frontiers in Human Neuroscience - Brain-Computer Interfaces* *Apr 2024*

- First Author; Identified and quantized 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* *Nov 2023*

- First Author; Programmed advanced XGBoost model predicting mortality with 98.8% accuracy & high recall in HNC patients.

"Audio and Text Sentiment Analysis of Radio Broadcasts" - *IEEE Access* *Nov 2023*

- First Author; Investigated the 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* *Mar 2024*

- Sole Author; Identified the origin of metastasis with 97.12% accuracy; Predicted mortality with 99.5% accuracy by engineering a tuned Recurrent Neural Network.

"Towards Precision Oncology: Predicting Mortality and Relapse-Free Survival in Head and Neck Cancer Using Clinical Data" - *Quantitative Biology, Arxiv* *Feb 2025*

- First Author; Hyper-tuned ML models to predict mortality and relapse-free survival in HNSCC patients, with 99% recall values.

"Using Machine Learning Regression Model to Predict the Optimum Election Algorithm for Parallel and Distributed Computing Systems" - *IEEE* *Dec 2023*

- Sole Author; Benchmarked a regression model to predict the optimum election algorithm with 94.98% accuracy.

"Voice Stimulated Inclusive Multiplayer Game Development with Speaker Recognition" - *IEEE* *Dec 2023*

- Co-Author; Engineered an inclusive gaming experience using simultaneous voice recognition technology for the impaired.

PROJECTS

A-EYE

Chief Executive *Dec 2023 - Present*

- Prototyped TinyML-powered assistive wearable for visually impaired users, achieving real-time object detection with 0.1-second latency and 8-hour battery life on edge devices.
- Integrated computer vision algorithms with embedded microcontroller and camera modules to produce a functional MVP.
- Secured INR 160,000 ($1,900 USD) in seed grant; patent application pending.

CPR Quality Assurance and Real-Time Feedback System

Artificial Intelligence Engineer *Aug 2023 – May 2024*

- Obtained seed funding of INR 200,000 ($2,400 USD) for medical device R&D; research manuscript under peer review.
- Programmed XGBoost model interpreting electromyographic (EMG) signals to assess CPR quality with 99.8% accuracy.
- Validated system performance through controlled manikin-based CPR simulations.

Elderly Fall Detection Wearable

Machine Learning Engineer *Aug 2022 – Nov 2024*

- Remodeled and deployed CNNs on microcontroller achieving 96% fall detection accuracy for elderly monitoring.
- Designed custom PCB and engineered functional hardware prototype; secured seed-stage funding for manufacturing.