

NIKHIL REDDY

Nikhil Kumar Reddy Chalamalla

APPLIED AI / MACHINE LEARNING / RESEARCH

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PROFILE

Artificial intelligence graduate with project experience in molecular machine learning, healthcare analytics, responsible AI, Python APIs, and cloud architecture. Co-author of a 2026 bioRxiv preprint on advanced AI frameworks for scientific problems. Interested in AI/ML engineering, applied AI, and data science roles.

TECHNICAL SKILLS

Programming and data: Python, SQL, Java, C, Linux, Pandas, NumPy, Matplotlib

ML and AI: scikit-learn, PyTorch, TensorFlow, Gradient Boosting, regression, classification, model evaluation

Scientific and responsible AI: RDKit, Morgan fingerprints, ChemBERTa, SHAP, diffprivlib

Systems: Flask, REST APIs, Docker, AWS, Git/GitHub, SLURM, Power BI

EDUCATION

Northeastern University - Boston, Massachusetts
Master of Professional Studies in Artificial Intelligence

CMR Institute of Technology - India
B.Tech, Computer Science and Engineering (AI & ML), 2024

EXPERIENCE

Power of Patient | Data Analyst / AI student project contributor

- Contributed to healthcare data preparation, PCS-related predictive analysis, and model-oriented evaluation.
- Developed Power BI dashboards and incorporated stakeholder feedback into analytical outputs.

Edugene Technologies Pvt. Ltd. | Python Intern | Sep-Nov 2022

- Completed Python programming and development assignments, strengthening program logic, debugging, and software fundamentals.

SELECTED PROJECTS

Ginkgo ADMET Predictive Modeling

Individual contribution to a graduate project | [GitHub](#)

- Built molecular feature pipelines combining 8 RDKit descriptors, 1,024 Morgan bits, and 768 ChemBERTa dimensions (1,800 features per compound).
- Generated embeddings on Explorer HPC with SLURM and trained regularized baselines across three ADMET endpoints.
- Verified historical CYP2D6 regression Spearman rho: 0.342 on a random held-out split; documented compound leakage and assay-label limitations.

Employee Attrition Prediction API

Independent project | [GitHub](#)

- Built a Gradient Boosting prediction workflow and Flask POST /predict endpoint, with preprocessing, model artifacts, and Docker-compatible packaging.

PROJECTS & RESEARCH

Nikhil Reddy | Portfolio resume | Continued

RESPONSIBLE AI & CLOUD

Privacy-Preserving Healthcare Readmission

Responsible AI group project | [GitHub](#)

- Contributed to readmission modeling and analysis using the UCI diabetic readmission dataset, examining differential privacy and subgroup behavior.
- Worked on evaluation, documentation, and communication of predictive performance, fairness, and privacy tradeoffs.

Differential Privacy for Medical AI

Educational privacy-utility experiment | [GitHub](#)

- Compared Logistic Regression tumor classification on original and privacy-transformed data using hashing of PII-like fields and Laplace-noise transformations.
- Documented predictive utility and class-imbalance limitations; maintained a local-only workflow for raw data.

AWS Medical SaaS Cloud Architecture

Conceptual architecture and design documentation | [GitHub](#)

- Designed an AWS migration case study with separate development/production VPCs, private application tiers, two Availability Zones, Auto Scaling, and RDS SQL Server Multi-AZ.
- Documented identity, auditing, monitoring, and secrets-management choices; implementation and formal validation remain follow-up work.

INDEPENDENT PROJECTS IN DEVELOPMENT

Signal Vault

Research prototype | Private repository | [GitHub](#)

- Worked on market-data capture, paper-trading infrastructure, SQLite journals, risk controls, and reproducible after-cost research. Portfolio does not claim demonstrated profitability or live execution.

Frontdesk - AI Receptionist Pilot

Local pilot application | Private repository | [GitHub](#)

- Built a Next.js owner dashboard and Fastify/PostgreSQL booking application with conflict-aware scheduling and provider adapters. Production and real-provider validation remain open.

RESEARCH PREPRINT

Practical Use of Advanced AI Frameworks on Real-Life Scientific Problems: Three Case Studies

Co-author | Northeastern University | bioRxiv | June 2026

Collaborative comparison of autonomous AI frameworks and human-led, AI-assisted workflows across three scientific problems. Preprint; not yet peer reviewed by a journal.

[bioRxiv paper](#) | [DOI: 10.64898/2026.06.23.734132](#)

ADDITIONAL INTERESTS

Published poet, former college football captain, and acrylic painter.