Rithwik Swarnkar

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US Citizen – No Sponsorship Required • Open to Relocation or Remote Roles

SUMMARY

AI/ML Developer and Founder experienced in designing, training, and deploying production-grade AI/ML systems across NLP, deep learning, computer vision and GenAI for diverse applications. Proficient in building end-to-end ML pipelines, optimizing deep-learning models, and deploying scalable applications primarily on Google Cloud Platform using FastAPI, Docker, and Cloud Run. Strong analytical foundation from a background in neurobiology, combining scientific research methods with data-driven execution in creating AI solutions that deliver measurable business impact.

TECHNICAL SKILLS

Languages: Python, R, SQL
Machine Learning & Deep Learning: PyTorch, TensorFlow, scikit-learn, Keras, Hugging Face Transformers
Generative AI, LLMs: LangChain, Retrieval-Augmented Generation (RAG), OpenAI API, Prompt Engineering
Web & API Development: FastAPI, Flask, RESTful APIs, CORS, Pydantic
Frontend Development: React, Vite, Tailwind CSS, Axios
Containerization & CI/CD: Docker, Cloud Build, Firebase CLI, GitHub Actions
Cloud Platforms: Google Cloud Platform (Cloud Run, Vertex AI, Firebase Hosting)
Data Analysis & Visualization: pandas, NumPy, Matplotlib, seaborn, Plotly
Domain Knowledge: Healthcare AI, Bioinformatics (Biopython), Scientific Imaging (DICOM)
Hardware Acceleration: Experienced with GPU-based deep learning (NVIDIA CUDA 12.x)

WORK EXPERIENCE

Applied AI/ML Developer & Founder

DeepNeuro.dev - San Jose, CA | April 2025 – Present

DeepNeuro.dev is an AI company leveraging machine learning, deep learning, and generative AI to build intelligent products in healthcare, bioinformatics, and real-world NLP applications.

- Founded the AI company, and now lead all AI product development, from ideation to deployment.
- Designed and implemented ML/DL pipelines for structured data, imaging, and NLP tasks.
- Integrated GenAI workflows using LangChain, OpenAI APIs, and RAG for text processing.
- Hosted containerized AI apps on GCP, integrated CI/CD via Cloud Build and Firebase Hosting.
- Applied MLOps principles for scalability, performance monitoring, and iterative optimization.

Key Projects

Emotion Analyzer API – End-to-End AI Application (FastAPI + React + GCP)
Python, FastAPI, Hugging Face Transformers, PyTorch, React, Vite, Tailwind CSS, Docker, Google Cloud Run, Firebase Hosting

- Built NLP microservice for emotion classification with fine-tuned DistilRoBERTa Transformer.
- Developed FastAPI backend with Pydantic validation, async inference, performance caching.
- Launched Dockerized containers on Cloud Run with environment-based CORS control.
- Created a React + Vite frontend with Tailwind CSS to visualize real-time emotion outputs.
- Automated CI/CD pipelines via Firebase CLI and Google Cloud Build.
- Delivered a low-latency, cloud-native AI product showcasing full-stack ML and MLOps.

AI-Powered Brain MRI Classifier – Deep Learning for Medical Imaging

Python, TensorFlow, Keras

- Trained CNN for tumor classification with data augmentation and Grad-CAM visualizations.

Enzyme Classification from Protein Sequences – Bioinformatics Project

Python, Biopython, scikit-learn

- Sequence-based classifier using AA compositions, with 91% accuracy and 0.96 ROC-AUC.

Additional Projects (on GitHub):

- *Fake News Detection (NLP):* TF-IDF + Logistic Regression model with data leakage prevention.
- *Student Performance:* PCA and clustering (K-Means, DBSCAN) to identify academic patterns.
- *Diabetes Risk Predictor*: ML pipeline for disease risk prediction with class balancing, tuning.

Clinical Intern | Respiratory & Internal Medicine, NITRD

National Institute of Tuberculosis and Respiratory Diseases, New Delhi, India | Oct 2024 – Mar 2025

- Supported physicians in clinical data workflows and managing multi-department patient care.
- Applied Python, Excel to analyze survey data, building insights for healthcare-focused AI apps.

EDUCATION

Stanford University – Continuing Studies

TECH 152Z: A Crash Course in AI (Instructor: Ronjon Nag)

- Grade: A+ (2025). Covered neural networks, generative AI, ethical considerations of AI systems

University of California, Davis – B.S. Neurobiology, Physiology, and Behavior

Graduated September 2024 | Dean's Honor List

- Relevant Coursework: Python, Calculus, Statistics, Data Analysis, Neurobiology, Physiology
- Research: Contributed to studies on metabolic inhibition of inflammation.

CERTIFICATIONS

- Deep Learning Specialization – Coursera (DeepLearning.AI)
- Applied Machine Learning for Healthcare – Coursera
- Clinical Training and Research – National Institute of Tuberculosis & Respiratory Disease