# ANAY SINHAL

Email: sinhal.anay@ufl.edu
GitHub: anayy09
Portfolio: anay.codes

Gainesville, FL, USA
Mobile: +1 (352) 219-5579
LinkedIn: in/anaysinhal
Available for Summer 2026 internships (May to Aug 2026)

## EDUCATION

**University of Florida** — Gainesville, FL, USA
*M.S. Computer & Information Science & Engineering* — *Aug 2025 – Present*
- Graduate and CISE Senior Certificate coursework (Spring 2025) GPA: 3.91/4.00
- Expected graduation Dec 2026.

**JK Lakshmipat University** — Jaipur, India
*B.Tech. Computer Science & Engineering* — *Aug 2021 – May 2025*
- CGPA: 8.76/10.
- Semester Exchange, **Indian Institute of Technology Kanpur**, Spring 2024.
- Semester Exchange, **Indian Institute of Technology Gandhinagar**, Fall 2022.

## TECHNICAL SKILLS

**Languages**: Python, Java, JavaScript/TypeScript, Go, C++, Gleam
**AI/ML**: PyTorch, TensorFlow, scikit-learn, Hugging Face, NLP, Computer Vision, LLM fine-tuning
**Web**: React, Next.js, Node.js, Django, FastAPI, Spring Boot, HTML/CSS
**Data & Infra**: PostgreSQL, MongoDB, Redis, SQL, Docker, Git, CI/CD, AWS, Bash
**Tools**: Postman, Figma

## EXPERIENCE

**Intelligent Clinical Care Center (IC3), University of Florida** — Gainesville, FL, USA
*Graduate Student Assistant* — *Sep 2025 – Present*
- Build Dockerized ETL pipelines to ingest and harmonize multi site clinical and environmental datasets into research ready schemas.
- Standardize workflows and logging across HiPerGator and on prem deployments, cutting environment setup and onboarding time for new analyses.

**Indraprastha Institute of Information Technology Delhi (IIIT-D)** — New Delhi, India
*Research Assistant* — *Sep 2024 – Oct 2024*
- Developed full stack applications (Next.js, Node.js, PostgreSQL) backing AI based cancer and ECG diagnostic models.
- Set up CI/CD pipelines with automated testing to reduce manual release overhead and keep production models in sync with research updates.

**GeeksforGeeks** — Noida, India
*Software Development Intern* — *May 2024 – Sep 2024*
- Rebuilt core content pages (Articles, Videos, Quizzes) using Next.js and React to improve load times and responsiveness over legacy PHP views.
- Implemented structured data and server side rendering that improved search visibility for high traffic pages.

**Sardar Vallabhbhai National Institute of Technology Surat (SVNIT)** — Remote
*Research Intern* — *May 2024 – Jul 2024*
- Built a contrastive learning pipeline with BERT for depression detection on DepressionEmo, reaching F1 score of 0.81.
- Improved F1 score by about 10 % over baseline BERT through better contextual representation and training strategy.

**Indian Institute of Technology Jammu (IIT Jammu)** — Remote
*Research Intern* — *Dec 2023 – Jan 2024*
- Developed a stacking ensemble (Random Forest, XGBoost, MLP) for stress detection on 11.5M wearable sensor records with 93.7 % macro F1 and 14.5 ms inference latency.
- Used SMOTE Tomek resampling to lift recall for the minority chronic stress class by 37 % over standard oversampling.

**Dexpert Systems Pvt. Ltd.** — Pune, India
*Software Development Intern* — *Jun 2023 – Jul 2023*
- Integrated React front end with Spring Boot and Laravel services for Zoho CRM workflows, cutting lead assignment latency from minutes to near real time.
- Designed REST APIs with JWT based authentication and delivered Docker Compose stacks and documentation for handoff.

## PROJECTS

**EHR Timeline Triage** | *Python, PyTorch, FastAPI, Next.js, DuckDB, Docker*                                   *Nov 2025*
- Built a research prototype that converts longitudinal EHR events into fixed-width time bins & trains LR, GRU, & Transformer models for 30 day readmission & 48 hour ICU mortality prediction with AUROC, AUPRC, Brier score, & calibration evaluation.
- Exposed the models through a FastAPI service & interactive timeline UI that surfaces risk trajectories & feature attribution based explanations over synthetic EHR cohorts.

**Radiology Copilot** | *PyTorch, MONAI, FastAPI, Next.js, Express, PostgreSQL, Docker*                         *Nov 2025*
- Developed a full stack radiology decision support app where clinicians can upload chest X ray studies, run a multimodal CLIP style model that combines ViT image encoder & ClinicalBERT text encoder, & obtain multi label findings with calibrated uncertainty.
- Integrated Grad CAM saliency overlays, AI drafted radiology reports, & a study store backed by PostgreSQL behind a Next.js dashboard with study lifecycle tracking & editing or export workflow.

**Medlyze: AI Powered Diagnostic Support Platform** | *Next.js 15, PostgreSQL/Prisma, Tailwind, LLM*           *Oct 2025*
- Implemented encrypted medical report intake with AES 256 file encryption, regex based de identification, & role based access for patients & clinicians.
- Added multimodal analysis across PDFs & images using LLM & vision models with longitudinal biomarker tracking & risk scoring views.

**Sepsis Sentinel** | *Python, FastAPI, XGBoost, React, Docker, PostgreSQL*                                     *Jul 2025*
- Trained XGBoost & LightGBM models for early sepsis detection from EHR data with AUROC 0.89 on validation cohorts.
- Built a FastAPI service & React dashboard to surface risk scores & trends, showing up to 4 hour earlier alerts in simulation.

## PUBLICATIONS

**Contrastive Learning and Large Language Models for Depression Detection from Social Media.**
*IEEE International Conference on Contemporary Computing & Communications*, Dec 2025. DOI: 10.1109/InC465408.2025.11256322

**Battery-Aware Super-Peer and Fountain Coding in Java P2P Systems.**
*Discover Internet of Things*, Springer Nature, Nov 2025. DOI: 10.1007/s43926-025-00240-3.

**Optimizing Diagnostic Accuracy in Healthcare by Using Deep Learning.**
*IEEE 4th World Conference on Applied Intelligence & Computing (AIC)*, Nov 2025. DOI: 10.1109/AIC66080.2025.11211920.

**LoRA-Tuned Segment Anything Model for Few-Shot Polyp Segmentation in Colonoscopy Images.**
*Journal of Carcinogenesis*, Sept 2025. DOI: 10.64149/J.Carcinog.24.3.372-386.

**Stress Monitoring in Healthcare: An Ensemble Machine Learning Framework Using Wearable Sensor Data.**
*International Conference on Innovations in Computational Intelligence & Computer Vision*, accepted; to appear in Springer.

## PATENTS

**A Method for Disaster-Resilient Digital File Dissemination via Fountain-Coded Broadcast with Super-Peer Election and Sparse Acknowledgement.**
Indian Patent Application No. 202511063465, published Jul 2025.

**A Stress Monitoring System Using Wearable Sensor Data Integrated with an Ensemble Machine-Learning Model.**
Indian Patent Application No. 202511044124, published May 2025.

## RELEVANT COURSEWORK

**Graduate:** Distributed Operating Systems Principles, Analysis of Algorithms, Advanced Data Structures, Computer Networks, Software Engineering, Data Science.
**Undergraduate:** Database Systems, Machine Learning, Object Oriented Programming.