



Aditya Raj

B.Tech

Electronics and Communication Engineering

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EDUCATION

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
B.Tech ECE	National Institute of Technology, Patna	7.76	2022-2026
Senior Secondary	CBSE	93.20%	2020-2022
Secondary	ICSE	90.20%	2010-2020

TECHNICAL SKILLS(+ PROFICIENT)

Languages: C/C++(+), Python(+), Typescript(+), Go

AI/ML: PyTorch, OpenCV, SciPy, numpy, scipy, scikit-learn, Hugging Face, Langgraph, Crew AI, LangChain, LLamaIndex

DataBase: Supabase, PostgreSQL

Other: Git, GitHub, Linux(Ubuntu) WSL

Tools: MATLAB

libraries: Nodemailer, Streamlit

Framework: Nextjs 13, 14

EXPERIENCE

- **21Spheres** Dec 2024 - Present
GenAI Development Intern Remote
– Designed and developed a **multimodal text-image based** AI search engine using **Ollama** and **CLIP** wrapped around a custom algorithm to provide personalized product **recommendations and search**.
- **IIT Guwahati** June 2024 - July 2024
Intern: Dept. of CSE 2024 Remote
Supervisor: Dr. Arijit Sur
– Developed a system in .py to **generate a diverse synthetic dataset of geometric shapes** and used PyTorch to write a **GAN for image completion** and **Generating Images using the UNet Architecture** for Generator.

PROJECTS | (ALL PROJECTS ARE ON PERSONAL PORTFOLIO)

- **Image Based Audio Generation | ML Engineering** Link | June, 2024 - Present
Tools: Python, OpenCV, OpenAI CLIP, Hugging Face GPT-2M Reference Paper: ClipClap, AudioClip
– Implemented an image captioning system using **CLIP** and a **PyTorch-based GPT** variant, increasing the number of contextually similar generated words by **30% through edge enhancement**.
- **Clinic Management Website** Link | Oct 2024 - Feb 2025
Tools: Typescript, Supabase, Next.js 14
– Developed a **high-performance website** that replaced a \$ 150 / month service, it supports over **10,000 users** and **300 monthly active users (MAU)**, ensuring all operations—CRUD, RBAC etc. **execute in under 0.5 seconds**.
– Built the appointment scheduling, OTP logic serving on vercel serverless. Optimized **SEO**, performance using **lazy loading**, **debounce**, and **memoization**, achieving **LCP under 1 second on slow 4G** and **under 0.35 seconds on no-throttling (capped at 8MB/sec)**.

ACHIEVEMENTS

Software

AI of GOD 3.0: IIT ISM	Ranked 1st on Kaggle, finetuned OCR-LMs using custom algorithm, achieved WER of 0.116 on old spanish manuscript (Link).	2024
Amazon ML Challenge	Ranked 184th among 75,000 registrations, achieved an F1 score of 0.4667 on the test set using moondream VLM after finetuning it on the train set.	2024
Adobe GenSolve	Ranked among the top 5%ile , worked with shape regularisation, completion and symmetry detection (Link).	2024

Academics

IOQA	Qualified National Standard Examination in Astronomy (HBCSE, Mumbai).	2022
NTSE	Qualified National Talent Search Exam Stage I .	2020
RMO	Among top 1% of students from classes 8th-12th in India and scored 44/102 .	2019
PRMO	Qualified Pre-Regional Mathematical Olympiad (2018, 2019, and 2021).	
METER	Achieved State Rank 7th from Bihar Region among 50K+ students .	2017

POSITIONS OF RESPONSIBILITY

- **Team Lead, AI/ML Web and Coding Club, NITP** September 2024 - Present
–Led the development of **OCR models**, **Image-based detection** integrated with **RNN-base for text and number**, wrapped around **custom algorithms** for enhanced accuracy.
- **Team Coordinator, AI/ML Google Developer Students Club, NITP** August 2023 - June 2024
–Conducted an **open-book pure mathematics test** for the selection of **first-year trainees**. Designed **AI/ML questions** for the **TCF Technical Contest**.

SIDE PROJECT

- Building [GoPod](#), a **personal AI collaborative assistant**.