Aryan **Gupta**

ML Enhusiast · Open Source Developer

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"The only way to do great work is to love what you do."

Work Experience

WasmEdge, CNCF ⌂   *Remote*

LFX Mentorship   *March 2024- Present*

- Working on C++ based inference of LLAMA models for the new MLX apple framework
- This will be used in a new plugin(part of proposal), which will enable use of MLX based LLAMA inference in the WasmEdge Runtime Env

Quansight Labs ⌂   *Remote, Austin Texas*

Software Developer Intern   *July 2023- September 2023*

- Improved PyTorch-Ignite's Code generator project, a Vue JS application for generating PyTorch based ML piplines for Kaggle community
- Worked on tesing infrastructure to improve the JS test coverage by 30 %
- Completed integration of the platform with Open Source tools like Nebari, Hydra and Python Fire

Indian Institute of Technology Roorkee   *Roorkee, Uttarakand, India*

Research Intern   *Oct. 2022 - Dec. 2022*

- Conducted research under Prof. Deep Kiran and Prof. Tarun to develop an optimiser in Python (Qiskit and AWS Bracket)
- Studied the performace of compute optimizers on electrical systems equations
- Completed tests on AWS Bracket platform for various optimizers and reviewed their performance

Education

Indian Institute of Technology Roorkee   *Roorkee, Uttarakand, India*

B.Tech. in Electrical Engineering   *Oct. 2021 - Present*

- Completed coursework on Digital and Power electronics and stimulation techniques using Matlab
- Studied about Assembly programming and CPU operations in x86 based CPUs

Projects and Hackathons

Adobe's Twitter Challenge | Inter IIT Tech Meet 12.0   *Madras, India*

Runner Up   *December 2023*

- Completed Adobe's Twitter Challenge to generate tweet likes and content using LLMs like LLAMA-7B
- Successfully finetuned and tested LLAMA on more than 2,80,000 data points and proposed an interesting approach to generate tweets (IP reserved by Adobe)

AIKavach | Data Science Group IIT Roorkee ⌂   *Roorkee, Uttarakhand, India*

Maintainer   *May. 2023 - July. 2023*

- A Flask-based web application that can denoise and certify Randomized Smoothing radius of various CV models.
- Been a core contributor of the project and the project has received 29 stars on Github for its v1 release

ESRGAN for Indian Space Research Organization(ISRO) ⌂   *India*

Problem Statement in Inter IIT Tech Meet 11.0   *February 2023*

- Received Bronze Medal and 5th position overall in the problem statement overall among 23 IITs
- Worked on Enhanced Super Resolution GANs to convert low resolution images into higher resolution as captured by Chandrayaan-2 orbiter

Preprints

[Re] Double Sampling Randomized Smoothing ⚲ ⌂   *Arxiv*

First Author   *27 Jun 2023*

- The paper studies the effects of DSRS algorithm on calculating Average Certified Radius(ACR) for CV models on MNIST and CIFAR10
- Conducted research during ML Repro Challenge 2022-23, paper got rejected but received score of 21/30 in evaluations.
- The study was appreciated by original authors, notably Bo Li, Assistant Professor UIUC

Skills

Programming	Python, C++, C, JS ,Bash, Matlab, LaTeX
Frameworks	PyTorch, Numpy, Scipy, Sklearn, TensorFlow, JaX, Transformers, CUDA
Utilities	Git, Docker, Conda, Github Actions, Linux, OSX, AWS
Back-end	Flask, Django, Node.js, Express.js, FastAPI
Front-end	HTML5, CSS, JavaScript, VueJS
Languages	English, Hindi

Achievements & Honours

2023	**Silver Medal - 2nd Place**, Inter IIT Tech Meet 12.0	*India*
2023	**3rd Place**, PyTorch Docathon (LFX event)	*Remote*
2023	**Bronze Medal**, Inter IIT Tech Meet 11.0	*India*
2022	**14th Place**, Social Summer of Code 2022 Hackathon	*India*
2021	**AIR 1751(0.1 Percentile)**, JEE Advanced Exam 2021	*India*
2021	**AIR 2581(0.1 Percentile)**, JEE Mains Exam 2021	*India*
2021	**AIR 1100**, KVPY 2021- Government of India Exam	*India*
2021	**96.2%**, CBSE Senior Secondary Board Exams (12th Standard)	*India*
2019	**98%**, CBSE Secondary Board Exams (10th Standard)	*India*

Extracurricular Activity

Pytorch-Ignite   *Remote*

OPEN SOURCE DEVELOPER   *Dec. 2022- October 2023*

- Added a Super Resolution Example to the main repository
- Added some enhancement features and worked on CI related bugs

Data Science Group IITR   *India*

CORE MEMBER   *Apr. 2022 - Present*

- Work on various core Data Science concepts, and spreading awareness about emerging areas like AI Security.
- Trying to reduce friction for students entering the ML community

Physics and Astronomy Group IITR   *India*

CORE MEMBER   *March. 2023 - Present*

- Study and spread awareness about Astronomy and Physics.
- Trying to help people learn about telescopes and instruments along with ML and Data processing of Space images