

Anirban Nath

Roll No.: 2104101001

MS (by Research) - Computer Science and Engineering

Indian Institute of Technology Indore

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EDUCATION

Degree/Certificate	Institute	CGPA/Percentage	Year
MS (by Research)	Indian Institute of Technology Indore	9.50 (Current)	2021-Present
B.Tech.	Kalyani Government Engineering College	8.28	2021
Senior Secondary	Don Bosco School, Bandel	93.75%	2016
Secondary	Don Bosco School, Bandel	86.20%	2014

PUBLICATIONS

• Near-Real-Time Detection of Craters: A YOLO v5 Based Approach (Paper Under Review)

International Conference on Machine Intelligence for GeoAnalytics & Remote Sensing (MIGARS 2023)

Authors: Sourish Chatterjee, Shayak Chakraborty, **Anirban Nath**, Pinaki Roy Chowdhury and Benidhar Deshmukh

EXPERIENCE

• DynamoFL - YC'22 Startup

Feb. 2022 - May 2022

Federated Learning Consultant

Remote

- Performed various experiments in Federated Learning (FL) to identify issues on the DynamoFL platform.
- Implemented SOTA NLP models such as MobileBERT and SentenceBERT on the Microsoft MIND Dataset for news classification and user-preference analysis/user clustering.
- Studied and implemented SOTA research papers about Lottery Ticket Networks/FL for use in Neural Collaborative Filtering Models that get more performant and lighter with training.
- Implemented a Semi-Supervised FL model that takes sensor data from wearables and generates mood predictions.

• Indian Institute of Technology Indore

Aug. 2021 - Present

Research Scholar

Indore, India

- Actively researching Universal Vision Transformers coupled with Federated Learning and Differential Privacy to make efficient and secure medical imaging models.
- Teaching Assistant for Machine Learning. (CS-603)
- Teaching Assistant in the C Programming Lab. (IC-151)

• Spiritwish

Feb. 2021 - May 2021

Technical Content Writer

Remote

- Researched and wrote professional articles about Blockchain Technology, Cryptocurrency, Artificial Intelligence, Renewable Energy and more.

• Vidgyor Media Technologies

Dec. 2019 - Feb. 2020

Computer Vision Intern

Bengaluru, India

- Improved upon the existing ML-based tech stack by implementing Deep Learning Convolutional Neural Networks to achieve significant performance boosts for custom logo detection within live TV news feed.
- Optimized the model for faster than real-time (approx. 40 fps) detection speeds, while simultaneously solving the multiple instance detection and dimensionality mismatch problems.
- Curated all the training dataset needed for the detector from scratch and then wrote a script to automate dataset generation. The script was further developed by the company as a standalone product.

• Analytics Vidhya

May 2020

Staff Author

Remote

- Wrote a two-part article about automating the process of generating labeled data for Convolutional Neural Networks for continuous training using the SIFT Algorithm/OpenCV.

PROJECTS

• Automated Ad-Detection using Convolutional Neural Networks

Jan. 2021 - Jun. 2021

Supervisor: Prof. Md. Iqbal Quraishi (Dept. of IT, Kalyani Government Engineering College)

- Implemented a deep learning pipeline using ConvNets for ad distinction/detection within a livestream feed by creating unique signatures for each ad. These signatures were then used to differentiate among hundreds of different advertisements in real time.

• Multi-Scale Template Matching using SIFT Algorithm

Nov. 2021 - Dec. 2021

Supervisor: Dr. Surya Prakash (Dept. of CSE, Indian Institute of Technology Indore)

- Used SIFT Algorithm to extract features from a template and locate it within a video clip, irrespective of the scale of the template or its position within a video frame.

TECHNICAL SKILLS

- **Programming:** Python, C/C++
- **Tools/Frameworks:** PyTorch, OpenCV, Keras, Tensorflow
- **Operating Systems:** Windows, Linux, MacOS* ** Elementary proficiency*

KEY COURSES TAKEN

- **Mathematics:** Linear Algebra, Calculus, Discrete Maths, Probability & Random Processes
- **Computer Science:** Advanced Algorithms, Machine Learning, Computer Vision

POSITIONS OF RESPONSIBILITY

- **Mentor of Projects Team,** Cynaptics Club, IIT Indore *Aug. 2021 - Present*
- **Core Member,** KeyGEn Coders, Kalyani Government Engineering College *Sep. 2019 - Jul. 2021*

ACHIEVEMENTS

- **Second Place,** Word Wars 3.0: General Debate, IIT Indore *2022*
- **Fourth Place,** Axelrod Duels, Equinox'22, IIIT Lucknow *2022*
- **First Place,** Data-Hack, Techtix: Espektro'20, Kalyani Government Engineering College *2020*
- **First Place,** Biz-Quiz, E-Summit'19: KGEC E-Cell, Kalyani Government Engineering College *2019*