

# Drishiti Bhasin

MACHINE LEARNING · OPEN SOURCE

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## Education

### Indian Institute of Technology, Roorkee

B.TECH. MAJORS IN MECHANICAL ENGINEERING, MINORS IN MATHEMATICS

- Cumulative Grade Point Average, CGPA: 8.57/10

Uttarakhand, India

July. 2019 - July. 2023

## Skills

**Programming** Python, C, C++, Cuda, HTML, CSS, Shell Scripting, LaTeX

**Frameworks** PyTorch, Keras, Tensorflow, Docker, Kubernetes

**Utilities** git, zsh, vim

**Languages** English, Hindi, Punjabi

## Experience

### NannyML

DATA SCIENCE INTERN

- NannyML is an open-source library working on post-deployment machine learning performance estimation and drift detection.
- Working on the tool's internal evaluation framework and overseeing its adaptation to textual data.
- Researching various Statistical/Distance based measures to adopt for Covariate and Concept Drift Detection.

Heverlee, Belgium

July 2022 - Present

### Microsoft

DATA SCIENCE INTERN

- see certificate
- Details cannot be disclosed under an NDA

Hyderabad, India

May. 2022 - July. 2022

### NumPy, Quansight Labs

RESEARCH INTERN

- Conducted research on the ethical consequences of building Deep Learning Models and the utility of NumPy in building these models without the use of any framework.
- Built prominent NLP architectures using pure Python and NumPy to perform data analysis on a socially relevant dataset
- Work was published in the form of a tutorial on the official website of NumPy (see tutorial)

Austin, Texas

July. 2021 - Sept. 2021

### PyTorch, Quansight Labs

SOFTWARE DEVELOPMENT INTERN

- Worked on the Data API Standardization
- See contributions to PyTorch

Austin, Texas

Jan. 2022 - March. 2022

### Multimodal Digital Media Analysis Lab (Dr. Rajiv Ratn Shah)

RESEARCH INTERN

- Developed a method for personalized facial image retrieval through relevance feedback using contrastive learning.
- Designed a user friendly web interface for this algorithm to be used by a metropolitan police department.
- Initial work accepted at AAAI'22 as a student abstract and a full paper accepted at WACV'23

IIT Delhi, India

Feb. 2021 - Sept. 2022

## Projects

### Machine Learning assisted evolutionary optimization

IIT ROORKEE

- Reviewed literature to understand the fundamentals of multi-objective optimization, genetic algorithms, NSGA-III algorithm, and the IP2 operator.
- Improved the performance of the NSGA-III algorithm utilizing the IP2 operator by tuning an otherwise hard-coded parameter via the use of Bayesian Optimization.
- Currently working on reducing runtime and latency in the algorithm.
- Initial work accepted as a full paper at EMO'23.

India

Jan. 2022 - April. 2023

## Analyze My ML Repo

DSG, IIT ROORKEE

India  
March, 2023 - Ongoing

- To ensure open sourced ML paper implementations are reproducible and assigning them a reproducibility score.
- Creating a research paper annotator to link parts of implementation with corresponding text in the research paper.

## Global Pandemic Response Challenge

IISc BANGALORE

India  
Nov. 2020 - Feb. 2021

- Under the guidance of Dr. Debasish Ghose, was the member of a team that worked on building a Covid cases predictor using LSTMs and time-series and a prescriptor model using an encoder-decoder architecture and Genetic Algorithms like NEAT.
- Presented our work in the Global Pandemic Response Challenge organized by Xprize.

## Honors & Awards

2022	<b>Finalist</b> , KPMG Ideation Challenge	India
2022	<b>Bronze Medalist</b> , Inter-IIT Tech Meet	India
2021	<b>Winner</b> , Chanakya UG Fellowship	India
2021	<b>Winner</b> , Uber She++	India
2020	<b>Finalist</b> , Global Pandemic Response Challenge	International
2019	<b>Top 0.1%</b> , Jee Advanced	India

## Relevant Coursework

### Undergraduate

ML/RL/NLP/DL

India  
2019 - Present

- CS 229: Machine Learning
- Reinforcement Learning by Deepmind X UCL
- UMass CS685 (Advanced NLP)
- CMSC 828W: Foundations of Deep Learning

## Publications

### Contrastive Personalization Approach to Suspect Identification

DEVANSH GUPTA\*, DRISHTI BHASIN\*, SARTHAK BHAGAT, SHAGUN UPPAL, PONNURANGAM KUMARAGURU, RAJIV RATN SHAH

IIT Delhi, IIT Roorkee  
Feb. 2022

- accepted in 36th Association for the Advancement of Artificial Intelligence (AAAI'22) Student Abstract, 2021 (see paper)

### A Suspect Identification Framework using Contrastive Relevance Feedback

DEVANSH GUPTA\*, ADITYA SAINI\*, DRISHTI BHASIN\*, SARTHAK BHAGAT, SHAGUN UPPAL, PONNURANGAM KUMARAGURU, RAJIV RATN SHAH

IIT Delhi, IIT Roorkee  
Aug. 2022

- accepted in the Winter Conference on Applications of Computer Vision (WACV'23)(see paper)

### Investigating Innovized Progress Operators with Different Machine Learning Methods

DRISHTI BHASIN\*, SAJAG SWAMI\*, SARTHAK SHARMA\*, SAUMYA SAH\*, DHISH KUMAR SAXENA, KALYANMOY DEB

IIT Roorkee  
Dec. 2022

- accepted in the conference on Evolutionary Multi-Criterion Optimization (EMO'23)

## Position of Responsibilities

2021	<b>Joint Secretary</b> , Data Science Group	IIT Roorkee
2021	<b>Joint Secretary</b> , Quizzing Section	IIT Roorkee
2021	<b>Volunteer</b> , Qagaar - Queer and Gender support group	IIT Roorkee
2021	<b>Volunteer</b> , IITR Cares - Animal Rescue and Shelter for Campus Fauna	IIT Roorkee
2020	<b>Volunteer</b> , National Service Scheme (Ngs, Relations and Sponsorships)	IIT Roorkee

## References

### Dr. Rajiv Ratn Shah

ASSOCIATE PROFESSOR, COMPUTER SCIENCE DEPARTMENT, IIIT DELHI

Delhi, India

- **e-mail:** rajivrtn@iiitd.ac.in

### Dr. Dhish Kumar Saxena

ASSOCIATE PROFESSOR, MECHANICAL DEPARTMENT, IIT ROORKEE

Uttarakhand, India

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