

# Anirudh Dagar

IV YEAR UNDERGRADUATE · MACHINE LEARNING

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## Education

### Indian Institute of Technology Roorkee

INTEGRATED M.TECH IN GEOLOGICAL TECHNOLOGY

- Cumulative Grade Point Average, CGPA:8.23/10

Roorkee, India

July. 2016 - Jun. 2021

## Publications

### ProteinGCN: Protein model quality assessment using Graph Convolutional Networks

[Paper] [GitHub]

Sanyal, S. and Anishchenko, I. and **Dagar, A.** and Baker, D. and Talukdar, P.

Indian Institute of Science, University of Washington, IIT Roorkee

Preprint

Apr. 2020

[link](#)

## Experience

### Quansight Labs

SOFTWARE DEVELOPMENT INTERN

- Data API Standardization : <https://data-apis.org>
- SciPy | PyTorch | CuPy Interoperability

Remote

Jun. 2021 - Present

### CERN

GOOGLE SUMMER OF CODE [OFFICIAL RELEASE] [BLOG]

- Mentor 2021. Student 2020.
- Development of **TMVA PyTorch Interface**.

Remote

May. 2020 - Present

### Amazon Web Services, AI

MACHINE LEARNING INTERN

- PyTorch Framework Adaptation Author: Dive Into Deep Learning. [Open Source]
- Development of the MLA course "Graph Machine Learning" for MLU.
- Worked on GNNs for Heterogeneous Graphs with Deep Graph Library.

Seattle

Oct. 2020 - Jan 2021

### Vernacular.ai

MACHINE LEARNING INTERN

- Built a **Bad Audio Detection** model to reject noisy inscrutable audios.
- Built a Seq2Seq Resegmentation module for **D-Vector + Clustering** prediction outputs in the **Diarization** pipeline.
- Generated Simulated Mixture Dataset for Diarization.

Bangalore, India

May. 2020 - Jul. 2020

### ProteinGCN, MALL Lab (Prof. Partha P. Talukdar)

RESEARCH INTERNSHIP [PAPER LINK]

- Introduced ProteinGCN, a novel method for Protein Model Quality Assessment using **GCNs**.
- Achieved 0.837 and 0.704 Pearson's r on global and residue level predictions respectively for Rosetta-300k.
- Multi GPU Parallelization of the complete training process to reduce train time achieving 40% speed ups.

IISc Bangalore, India

May. 2019 - Apr. 2020

### Temporal Relation Classification, MALL Lab (Prof. Partha P. Talukdar)

RESEARCH INTERNSHIP [PROJECT REPORT]

- Built a pipeline to use TIME ML based TIME BANK Dataset for Temporal Relation Classification.
- Implemented (**GCN+biLSTM**) for classification on TB Dense Dataset.

IISc Bangalore, India

May. 2018 - Jul. 2018

## Projects

### Dive Into Deep Learning [https://d2l.ai]

MAINTAINER

- Framework Adaptation Author.
- Port MXNet code into PyTorch for the book Dive Into Deep Learning by Aston Jhang et al. (10k+ Github Stars)

Roorkee

May. 2019 - Present

### GitHub Tracker [GitHub] [Download]

DEVELOPER

- Track Unfollowers with gh-tracker chrome extension.

Roorkee

Mar. 2021

## PaperViz [GitHub]

DEVELOPER

- Developed a web interface to visualize research papers based on similarity.
- Utilized SentBERT, SciBERT and SPECTER to create document embeddings.

Roorkee, India  
Apr. 2020 - Sept. 2020

## Graph Representation Learning [GitHub]

DEVELOPER

- PyTorch implementation & blogs on major Graph Representation Learning papers.
- Deep Walk, Graph Convolutional Networks, GraphSAGE, ChebNet, Graph Attention Networks

Roorkee, India  
Oct. 2019 - Jan. 2020

## Satellite Image Classification in Remote Sensing Data Using Neural Nets

DEVELOPER

- Developed multiple image classification models on the 21 Class UC Merced Land Use Dataset. [Report]

Roorkee  
Feb. 2018

## Achievements & Honors

- 2019 **All India Rank 7**, Flipkart GRID ML Competition Level 1
- 2019 **Overall 2nd**, Enigma Hackathon, Astrax IIT Mandi 2019 (Astronomy Competition)
- 2018 **Scholar**, Won Chevron Scholarship Student Member AAPG 2018
- 2017 **2nd Position**, Table Tennis, Sangram'17 (Sports Fest IIT R)
- 2016 **Top 0.1%**, Qualified JEE Advanced 2016
- 2012 **State Level**, National Talent Search Examination 2012 (NTSE)
- 2012 **Participant**, Bosch Indo-German 2012 Exchange Programme

Bangalore, India  
Mandi, India  
Roorkee, India  
Roorkee, India  
India  
Ghaziabad, India  
Ebern, Germany

## Skills

- Programming** Python, C/C++, HTML, CSS, Javascript, Shell Scripting, LaTeX
- Frameworks** PyTorch, Numpy, Keras, Tensorflow
- Utilities** git, zsh, vim, MacOS X, Sublime, Adobe Photoshop, Sketch
- Languages** English, Hindi

## Relevant Coursework

### Undergraduate

ML/DL/NLP/Vision

- CS 229: Machine Learning
- CS 224W: Machine Learning with Graphs
- CS 224n: Natural Language Processing with Deep Learning
- CS 11-747: Neural Networks for NLP
- CS 231n: CNNs for Visual Recognition
- NPTEL-NOC 18: Deep Learning

India  
2016-Present

## Extracurricular Activity

### Table Tennis Team IIT Roorkee

MEMBER

- Participated in various tournaments representing the institute.

Roorkee  
Jan. 2017 - Apr. 2021

### Data Science Group IIT Roorkee [Website]

PRESIDENT 2019-20

- Headed projects and organized hackathons based on Machine Learning.
- Speaker, SDS Labs Srishti 2k19 Open Lecture Series: Security and Privacy of Machine Learning, [Link to Slides](#)

Roorkee  
Jan. 2018 - Apr. 2021

## Positions Of Responsibility

- 2020 **Mentor**, Mentors Without Borders
- 2019 **President**, Data Science Group
- 2019 **Mentor**, Student Mentorship Program
- 2018 **UG, DAPC Representative**, Dept. of Earth Sciences, IIT Roorkee

Africa  
IIT Roorkee  
IIT Roorkee  
IIT Roorkee