

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:8.17/10

Roorkee, India

July. 2016 - Exp. May. 2021

Experience

Research Internship, MALL Lab (Prof. Partha P. Talukdar)

PROTEINGCN

- Introduced ProteinGCN, a novel method for Protein Model Quality Assessment using GCNs.
- Developed a pipeline to preprocess the Protein Data Bank 100k/300k dataset incorporating Bond Information.
- Implemented Crystal Graph Convolutional Neural Network(CGCNN) on CASP13 dataset for Protein QA beating the SOTA.
- Achieved 0.809 and 0.582 Pearson Correlation coefficient on global and residue level predictions respectively for CASP13 dataset.
- Multi GPU Parallelization of the complete training process to reduce train time achieving 40% speed ups.

IISc Bangalore, India

May. 2019 - Jan. 2020

Research Internship, MALL Lab (Prof. Partha P. Talukdar)

TEMPORAL RELATION CLASSIFICATION

- Built a pipeline to use TIME ML based TIME BANK Dataset for Temporal Relation Classification.
- Implemented Graph Convolutional Network(GCN+biLSTM) for classification on TB Dense Dataset to replace the current relation classifiers for Events/Timexes in text corpora which were partially hand engineered.

IISc Bangalore, India

May. 2018 - Jul. 2018

Projects

Graph Representation Learning [GitHub]

DEVELOPER

- PyTorch implementation & blogs on major Graph Representation Learning papers.
- Deep Walk [Blog]
- Graph Convolutional Networks [Blog]
- Graph SAGE [Blog]
- Chebyshev Graph Convolutional Networks [Blog]
- Graph Attention Networks [Blog]

Roorkee, India

Oct. 2019 - Jan. 2020

Local Neighborhood Graph Auto Encoder

DEVELOPER

- Implemented the paper Multi-Task Graph Autoencoders (NeurIPS 2018 Workshop)
- Reproduced SOTA results using Multi Task Learning in PyTorch.
- Tested on PubMed, Cora, Citeseer, Protein Datasets.

Roorkee, India

Mar. 2019 - Apr. 2019

d2l-pytorch (Dive Into Deep Learning) [GitHub]

MAINTAINER

- Port MXNet code into PyTorch for the famous book Dive Into Deep Learning by Aston Jhang et al.
- Converted the book into an interactive Jupyter Notebook format.

Roorkee

May. 2019 - PRESENT

Adversarial Lab [GitHub]

DEVELOPER

- Used various variants of Fast Gradient Sign Method to generate adversarial examples on the CIFAR10 Dataset.
- Deployed the model using Flask creating various attack demos.

Roorkee

Aug. 2018

Personal ChatBot

DEVELOPER

- Scraped personal chats from social networking platforms like Facebook, WhatsApp etc.
- Trained a Seq2Seq LSTM model on the scraped dataset.
- Used Teacher Forcing to help training the model.
- Deployed the trained model to a Flask server for interactive use.

Roorkee

Feb. 2018

Satellite Image Classification in Remote Sensing Data Using Neural Nets

DEVELOPER

- Trained a novel GoogLeNet CNN model on the 21 Class UC Merced Land Use Dataset.
- This project was completed as a part of coursework in Remote Sensing. **Report**

Roorkee

Feb. 2018

- Developed a hugo based static website incorporating blogs, projects, events and team pages.

Achievements & Honors

2019	All India Rank 7 , Flipkart GRID ML Competition Level 1	Bangalore, India
2019	Overall 2nd , Enigma Hackathon, Astrax IIT Mandi 2019 (Astronomy Competition)	Mandi, India
2018	4th Posotion , Table Tennis, Udghosh IIT Kanpur 2018	Kanpur, India
2018	Scholar , Won Chevron Scholarship Student Member AAPG 2018	Roorkee, India
2017	2nd Position , Table Tennis, Sangram'17 (Sports Fest IIT R)	Roorkee, India
2016	Top 0.1% , Qualified JEE Advanced 2016	India
2012	State Level , National Talent Search Examination 2012(NTSE)	Ghaziabad, India
2012	Participant , Bosch Indo-German 2012 Exchange Programme	Ebern, Germany

Skills

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

Relevant Coursework

Undergraduate

India

ML/DL/NLP/Vision

2016-PRESENT

- CS 229: Machine Learning
- CS224W: 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
- MAN 001: Mathematics 1 (Multivariate Calculus + Linear Algebra)
- MAN 106: Numerical Methods

Extracurricular Activity

Table Tennis Team IIT Roorkee

Roorkee

CORE MEMBER

Jan. 2016 - PRESENT

- Participated in various tournaments represensting the institute.

Data Science Group IIT Roorkee [Website]

Roorkee

PRESIDENT 2019-20

Jan. 2018 - PRESENT

- Organized and conducted hackathons based on Deep Learning & Machine Learning.
- Speaker, SDS Labs Srishti 2k19 Open Lecture Series: Security and Privacy of Machine Learning, [Link to Slides](#)
- Worked on internal group projects focusing on deep learning research.

AAPG IIT Roorkee Student Chapter

Roorkee

SENIOR MEMBER

Aug. 2016 - PRESENT

- Conducted multiple events in Cognizance (Technical Fest, IIT R) and Thomso (Cultural Fest, IIT R)
- Help manage and organize invited talks from reputed professors and industrial collaborations.

Positions Of Responsibility

2019	President , Data Science Group	IIT Roorkee
2019	Mentor , Student Mentorship Program	IIT Roorkee
2018	UG, DAPC Representative , Dept. of Earth Sciences, IIT Roorkee	IIT Roorkee
2018	Mentor , Soft Skills Program	IIT Roorkee
2018	Former Coordinator , Sangram, Table Tennis	IIT Roorkee
2017	Former Associate VP Public Relations , Toastmasters Chapter IIT Roorkee	IIT Roorkee