Anmol Anand

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EDUCATION

Texas A&M University, College Station   Aug 2022 – Present
Master of Science in Computer Science   *GPA: 4.00*

Indian Institute of Technology, Roorkee   Jul 2015 – May 2019
Bachelor's in Computer Science   *GPA: 3.38*

TECHNICAL SKILLS

Software Engineering: Ruby, Rails, Docker, Heroku, Databases, Postgres, NodeJS, React, Azure, AWS, Distributed Computing, Protocol Buffers, Cron, Multi-threading, C++, Java, SQL, JavaScript, HTML, Algorithms, Data Structures

Machine Learning: Python, PyTorch, PyTorch Geometric, Convolutional Neural Nets, Vision, Graph Neural Nets, Data Augmentation, Information Retrieval, Big Data, Map Reduce, Apache Hadoop, ANTLR

WORK EXPERIENCE

Magna International | *Data Scientist Intern*   Summer 2023

- Developed a vision-oriented application for **image segmentation and classification**. The application captures images from a camera, allows local or Azure saving, and provides a user-friendly interface for labeling. It also allows training on annotated data using popular models like ResNet, AlexNet, and GoogLeNet. The application was created using NodeJS, and React, and the models were written using PyTorch.

Goldman Sachs | *Software Engineer II*   Jun 2019 – Jun 2022

- Worked in the **Search Engineering** team on a natural language, petabyte-scale, distributed search engine that powers searches for almost every use-case of the firm. My contributions encompassed various aspects, including preprocessing large datasets using batch-processing offline jobs, enhancing search result quality, summarizing search results, and optimizing the retrieval algorithm's latency for a seamless user experience.

Goldman Sachs | *Software Engineer Intern*   Summer 2018

- **Kronos, Scheduler for Hadoop jobs**: Built a scheduler for a wide variety of batch-processing map-reduce jobs. Consequently, automated and monitored months of work in a well encapsulated program.

ACADEMIC EXPERIENCE

Data Integration, Visualization, and Exploration Lab | *Open Source Contributor*   Spring 2023

- Enhanced the capabilities of DIVE into Graphs (DIG) library by implementing GraphAug: a Graph Augmentation method using Graph Neural Networks (GNNs). Additionally, I created user-friendly Python documentation for the GraphAug implementation and improved graph classification performance by generating augmentated samples.

Programming and Algorithms Group, IIT Roorkee | *Coordiantor*   May 2016 - May 2019

- Responsible for conducting lectures on Data Structures and Algorithms and conducting on-campus programming contests - Insomnia, CodeBlitz, CodeCipher.

Indian Institute of Technology | *Teaching Assistant - Discrete Structures*   Spring 2019

- Assisted students with course materials, grading assignments, and facilitating discussions.

PROJECTS

CodeJudge - Competitive Programming WebApp   Spring 2023

- CodeJudge is a Competitive Programming Platform based on Ruby on Rails, deployed using Docker and Heroku. Instructors create problems, and students solve them in their preferred language. The platform provides real-time code evaluation, a leaderboard, and a collaborative discussion forum.

Fast image classification using ResNet variant   Fall 2022

- Developed an advanced image classification model using a novel ResNet variant with optimized layer depth, channel sizes, and skip connections. The model achieved impressive accuracy of 93.56% in just 90 epochs, effectively addressing challenges like vanishing gradients and slow convergence.

A novel graph clustering method   Fall 2022

- Introduced a novel k-way graph conductance function to measure the quality of a k-clustering on a graph. Compared its effectiveness in finding k-clusters to existing k-way conductance functions. Gave a novel proof for a k-way Cheeger's inequality on this conductance function.

ACHIEVEMENTS

- **Codeforces**: Max rating 2008 (Candidate Master)
- **Codechef**: Max rating 2172 (5 stars)
- Texas A&M University: International Graduate Student Scholarship (2022-23)
- Represented IIT at ACM-ICPC India on-site regionals
- IIT Joint Entrance Exam (2015): All India rank 502 out of 1.2 million candidates