Anmol Anand

+1 979 326-3375 | aanand@tamu.edu | linkedin.com/in/anmolaanand

Education

Texas A&M University, College Station — Aug 2022 – Present
Master of Science in Computer Science — *GPA: 4 / 4*
Courses: Deep Learning, Advanced Graph Algorithms, Analysis of Algorithms

Indian Institute of Technology, Roorkee — Jul 2015 – May 2019
Bachelor of Technology in Computer Science and Engineering — *GPA: 8.45/10*
Courses: Machine Learning, Data Structures, Theory of Computation, Network Programming

Technical Skills

Areas of expertise: Information Retrieval, Distributed Computing, Deep Learning, Discrete Mathematics, Algorithms
Frameworks: PyTorch, Apache Hadoop, Apache Twill, Map-Reduce, ANTLR, Protocol Buffers
Languages: C++, Java, Python, JavaScript, Julia, SQL

Work Experience

Search Engineering, Goldman Sachs | *Software Engineer II* — Jun 2019 – Jun 2022
Worked on a natural language, petabyte-scale, distributed search engine that powers search for almost every use-case of the firm.

- Improved the complexity of the retrieval algorithm, **reducing the average retrieval latency by a factor of 50**.
- Improved the **detection of meaningful n-grams** in search queries, increasing **precision from 0.45 to 0.85** and **recall from 0.30 to 0.59.**
- Redesigned the document scoring algorithm, **improving query-document relevance by 30%**.
- Introduced a score to consider the **positions of relevant terms** in documents, further **improving query-document relevance by 16%**.
- Worked on **summarizing search results** (which could go up to a billion documents).
- **Generated the inverted index** for two corpora.

Projects

k-way conductance to find k-clusters — Fall 2022
Advisor: Dr. Nate Veldt (Professor at CS Dept, TAMU)

- Introduced a novel k-way graph conductance function. Compared its effectiveness in finding k clusters to previously existing k-way conductance. Gave a novel proof for a k-way Cheeger's inequality on this conductance function.

Evading ML-based malware detection — Spring 2019
Advisor: Dr Manoj Misra (Professor and former Head of CS Dept, IIT Roorkee)

- Used generative adversarial networks to produce malware that would elicit false classification from ML-based detectors. Brought down the average precision of 5 ML-based detectors from 0.95 to 0.70.

Kronos, Scheduler for Hadoop jobs — Summer 2018
Internship project at Surveillance Analytics Group, Goldman Sachs

- 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.

Positions of Responsibility

DIVE Lab, Texas A&M University | *Researcher* — Nov 2022 - Present

- Working on augmentation of Graph datasets.

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

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

Academic Reinforcement Program, IIT Roorkee | *Teaching Assistant*

- Discrete Structures — Spring 2019
- Electrodynamics and Optics — Autumn 2017

Achievements

- **Codeforces**: Max rating 2008 (Candidate Master)
- **Codechef**: Max rating 2172 (5 stars)
- **IIT Joint Entrance Exam(2015)**: All India rank 502 out of about 1,200,000 participants
- Represented IIT-Roorkee at **ACM-ICPC Amritapuri on-site regionals**.