Anirudh Rathore

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Research Interests

My primary research objective is to improve human life by augmenting it with artificial intelligence. Currently, I am working on interpretable machine learning to build a bridge of unwavering trust between humans and these black-box models.

Education

University of Colorado Boulder, CO (4.0/4.0) Aug 2019 - Present (Expected - May 2021)
Master of Science, Computer Science
Courses: Machine Learning, Graduate Algorithms, Human-Centered Machine Learning, Big Data Architecture, Research Colloquium, Natural Language Processing, Datacenter Scale Computing, Independent Study

Birla Institute of Technology Mesra, India (78%) Aug 2013 - Aug 2017
Bachelor of Engineering, Computer Science
Courses: Data Structure, Algorithms, Operating Systems, Object-Oriented Programming using JAVA, Database Management Systems, Computer Networks, Parallel, and Distributed Systems

Publications

1. Samuel Carton, **Anirudh Rathore**, Chenhao Tan
   Evaluating and Characterizing Human Rationales [Long Paper]
   In Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing (EMNLP'2020).

Pending Patent

- *Kernel Level Application data Protection* filed in Aug 2019 at the US Patent Office

Work Experience

University of Colorado, Boulder **Graduate Research Assistant** Aug 2020 - Present
Supervisor - Prof. Chenhao Tan **Lab** - Natural Language Processing and Computational Social Science Lab
- Learning from explanations - Working on investigating the effect of using explanations or generated rationales as additional supervision to prediction tasks.

VMware, Palo Alto **Summer Intern** May 2020 - Aug 2020
- Removed the redundancy of implementing a quota system for all VMware services which must enforce a limit on resources like CPU, memory, etc. by introducing a general-purpose quota system.

VMware, India **Member of Technical Staff 2** Jul 2019 - Aug 2019
- Increased security efficiency and improved accessibility by almost 70% by implementing a Facial Recognition verification system which was used as a widget in a mobile app but developed as a framework exposed as a REST API.

VMware, India **Member of Technical Staff** Jul 2017 - Jul 2019
- Decreased software delivery time by implementing an NLP pipeline - Demo Link of the platform which helps developers to directly use natural language processing tools like intent classification and entity recognition without worrying about the details of machine learning algorithms.
- This was a CTO funded research project called xlabs.

VMware, India **R&D Intern** May 2017 - Jul 2017
- Developed proof of concept of summarization of technical product details to a concise extractive or abstractive summary. Curated the dataset for this by annotating extractive summaries from a paragraph.

Research Projects

OscarNet **University of Colorado, Boulder** Sept 2019 - Dec 2019

- Automated Garbage Detector and removal - Image segmentation on garbage data using Mask RCNN and depth imaging to guide an automated system to pick up trash in a frame - Github Link

AutoEval **BIT Mesra** Aug 2016 - Dec 2016

- Undergraduate dissertation on automated evaluation of subjective answers by comparing the teacher specified answers with the recorded subjective answers.

ImageClass **BIT Mesra** May 2015 - Jul 2019

- Image classification on CIFAR-10 dataset using KNN classifier.

Achievements

- Received a publication recognition award from the Department of Computer Science at the University of Colorado, Boulder for my publication at EMNLP'20
- Qualified for **ACM ICPC** regionals 2015 held at Amritapuri, India.
- Studied with a 25% tuition fee waiver during my undergrad for being a promising student with an excellent academic record.
- All India rank of 9393 out of more than a million students at JEE Mains 2013.

Skills

- **Languages:** Python, JAVA, C, C++, R, Shell scripting, MySQL, Oracle SQL, HTML, CSS
- **Machine Learning:** Natural Language Processing, Computer Vision, Numpy, Pandas, sklearn, TensorFlow, keras
- **Frameworks:** Flask, Flask RESTPlus, PyTest, Apache Kafka, PySpark, SpringBoot
- **Tools:** Git, Docker, Kubernetes, Jira, Pivotal Tracker
- **Databases**: MongoDB, Relational, Cassandra, Redis