# Aditya Srivastava

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#### Education

#### University of Colorado, Boulder

Expected May 2024

MS in Computer Science [GPA: 4.00 / 4.00]

#### **International Institute of Information Technology**

May 2022

BTech in Computer Science and MS (Honors) in Computational Linguistics

· Dean's List

### Technical Skills

Languages: Python, C/C++, Javascript, Java, PHP

Web: HTML, CSS, Django, ReactJS, Flask, FastAPI, jQuery, Bootstrap, Node.js

ML and NLP: Tensorflow, PyTorch, Keras, HuggingFace, LangChain, NumPy, Sklearn, spaCy

Data Warehousing: SQL, NoSQL (Redis, MongoDB, Neo4i), Elasticsearch, Spark

DevOps and MLOps: Amazon Web Services, Google Cloud Platform, Kubernetes, Terraform, Ansible, GitHub CI/CD

Miscellaneous: GNU-Linux, Windows, Git, LaTeX, Arduino, Docker, gRPC

# **Experience**

**EthAirNet** Aug 2023 - Present

Software Engineering Student Associate

Boulder, CO

- Developing a set of unicast and multicast and in-network-computation protocols at the data-link layer for datacenter HPC and AI applications in P4lang and C++.
- Employing stateless flow-zone switching using software defined addressing for highly efficient routing.
- Presented the work at the IEEE 802 Plenary Session 2024, at Denver.

May 2023 - Aug 2023

DevOps Engineering Intern

San Francisco, CA

- Built enterprise infrastructure and networks using Infrastructure-as-Code tools, such as Terraform and Ansible.
- Automated deployments using GitHub Actions CI/CD.
- Designed and implemented an end-to-end **ChatOps** pipeline in **Python**.

SentiSum Aug 2021 - Sep 2022

Machine Learning Engineer

London, UK

- Built systems for translation, classification, anomaly detection and unsupervised information extraction.
- Made 3x improvement to translation throughput and improved performance by 15%, by switching away from online translation services and building custom models.
- Scaled and parallelized deep learning based natural language processing systems for efficient inference on production loads.
- Built APIs in Flask and FastAPI and employed cloud platforms such as AWS and GCP to serve live machine learning models.

#### **Projects**

### **Retrieval Augmented Generation for File Search**

Jul 2023

- Built an OpenAl GPT-4 based RAG pipeline using LangChain to perform natural language search over user data stored in a distributed file system.
- Won the Al First Award for the project at DropBox's Hack Week, 2023 hackathon.

## **HF-Trim** | github.com/lamAdiSri/hf-trim

Aug 2022

- Created an open-source Python library for trimming the vocabulary on pretrained language models, lowering memory requirements of models by up to 90% at minimal cost to performance.
- Employed in both research and production environments, with over 5k downloads.
- Actively maintained on GitHub and hosted on the Python Packaging Index.

### Federated Learning on Private Chat Data | github.com/lamAdiSri/federated\_learning\_bda

Jan 2023

- Privacy preserving ML on personal chat data, using federated learning algorithms.
- Implemented Map-Reduce routines in Apache Spark for highly efficient model aggregation and evaluation.
- Built with PyTorch and deployed to GCP, with extensive quantitative and qualitative testing on millions of samples.

### TLDR for CODWOE. SemEval Workshop 2022 | aclanthology.org/2022.semeval-1.6

Jul 2022

- Achieved first place on the shared task of optimizing a large language model from scratch on dictionary data alone.
- Augmented the transformer architecture and explored techniques such as unsupervised pretraining, multitask learning and contrastive learning.
- Published at the CODWOE NLU shared task in the SemEval Workshop 2022, NAACL.

## **Achievements**

Ranked 8th and 11th globally in the Labor and SCRBL challenges respectively at Alcrowd, a competitive ML platform. Winner of Howzhack 2019, India's biggest online hackathon, and Megathon 2018, a national university-level hackathon.