

Aditya Srivastava

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Education

University of Colorado, Boulder

MS in Computer Science [GPA: 4.00 / 4.00]

International Institute of Information Technology

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

- Dean's List

Expected May 2024

May 2022

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, Neo4j), 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

Software Engineering Student Associate

Aug 2023 – Present

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.

Dropbox

DevOps Engineering Intern

May 2023 – Aug 2023

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 **Python3**.

SentiSum

Machine Learning Engineer

Aug 2021 – Sep 2022

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 a **OpenAI GPT-4 RAG pipeline** using **LangChain** to perform **natural language search** over user data stored in a distributed file system.
- Won the **AI 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.