

# ADITYA SRIVASTAVA

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## EDUCATION

**MS in Computer Science [GPA 4/4]** *Expected 2024*

University of Colorado, Boulder, United States

**MS (Research) in Computational Linguistics [GPA 8.25/10]** *2022*

IIIT Hyderabad, India

- Member of the **Gender Sensitization Committee**.

**BTech (Honors) in Computer Science** *2019*

IIIT Hyderabad, India

- Recipient of the **Dean's List Scholarship**.
- Head Coordinator of the **Music Club**.

## EXPERIENCE

**Network Automation Engineer Intern, Dropbox** (Remote - San Francisco, California, USA) *2023 - Present*

- Working on enterprise infrastructure using **Infrastructure-as-Code** tools, such as **Terraform** and **Ansible**.
- Automating deployment using **CI/CD** pipelines.
- Designing and implementing an end-to-end **ChatOps** pipeline in Python, for improving development and operational workflow.
- Won the **AI First Award** for our project involving the use of LLMs to improve natural language search during **Hack Week, 2023**.

**Research Engineer - ML and NLP, SentiSum** (London, UK) *2021 - 2022*

- Developed systems for **text classification**, **textual anomaly detection** and **unsupervised information extraction**.
- Made a **3x improvement** to **translation** throughput and improved translation performance with bespoke, in-house systems.
- **Scaled** and **parallelized** deep learning based natural language processing systems for efficient inference on production loads.
- Employed **cloud platforms** such as **AWS** and **GCP** to **serve live** machine learning models to clients for inference and for use in downstream tasks.

**Research Assistant, Language Technologies Research Center** (IIIT Hyderabad, India) *2017 - 2022*

- Researched automated **identification of political bias** in news, using a mix of hand crafted linguistic features and deep neural networks.
- Researched efficient, low-resource NLP methods for **sentiment analysis** and **sequence generation** in codemixed languages.
- **Optimized large language models** to be efficient in terms of both data and compute, and trained them in a multilingual setting.

**Research Intern, ICAR CNR** (University of Calabria, Italy) *2019 - 2020*

- Explored deep learning for **recommendation systems** through **memory**, **capsule** and **graph neural networks**.

## PROJECTS

**Project: Federated Learning on Private Chat Data** ([github.com/lamAdiSri/federated\\_learning\\_bda](https://github.com/lamAdiSri/federated_learning_bda)) *April 2023*

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

**Publication: TLDR for CODWOE, SemEval Workshop 2022** ([aclanthology.org/2022.semeval-1.6](https://aclanthology.org/2022.semeval-1.6)) *July 2022*

- Achieved **first place** on the definition modeling subtask and attained competitive scores on the embedding generation subtask.
- Augmented the transformer architecture and explored techniques such as **unsupervised pretraining**, **multitask learning** and **contrastive learning**.
- Published "**TLDR: Transformers for Learning Dictionaries and their Representations**" at the CODWOE NLU shared task in the SemEval Workshop 2022, NAACL.

**Personal Project: HF-Trim** ([github.com/lamAdiSri/hf-trim](https://github.com/lamAdiSri/hf-trim)) *July 2022*

- Created a python package for trimming the vocabulary on pretrained HuggingFace models, **lowering memory requirements** of models at **minimal cost to performance**.
- Employed in both research and production environments, with almost **4k downloads**.
- **Actively maintained** on GitHub and hosted on the Python Packaging Index.

**Publication: HCMS for SentiMix, SemEval Workshop 2020** ([aclanthology.org/2020.semeval-1.167](https://aclanthology.org/2020.semeval-1.167)) *December 2020*

- Designed a multilevel neural architecture, employing **CNNs** and **self-attention** to perform sentiment analysis in a low-resource, codemixed language setting.
- Published "**HCMS: A Neural Approach to Sentiment Analysis for CodeMixed Texts**" at the SemEval Workshop 2020, ACL.

**Research Project: Collaborative Memory Networks for Recommendation Systems** ([github.com/lamAdiSri/cmn4recosys](https://github.com/lamAdiSri/cmn4recosys)) *June 2019*

- Ported the architecture detailed in the "Collaborative Memory Networks for Recommendation Systems" paper by Ebesu et al. from **Tensorflow** to **PyTorch**.

## ACHIEVEMENTS

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