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**.

TECHNICAL SKILLS

Programming Languages: Python, C++, Javascript
Web Tech: HTML, CSS, FastAPI, Flask
ML and NLP: PyTorch, NumPy, Sklearn, spaCy, Keras, Tensorflow
Data Warehousing: SQL, Elasticsearch, PySpark
DevOps/MLOps: Amazon Web Services, Google Cloud Platform, Kubernetes, Terraform, Ansible, GitHub CI/CD
Miscellaneous: GNU-Linux, Windows, Git, LaTeX, Arduino, Docker

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/IamAdiSri/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) *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/IamAdiSri/hf-trim) *July 2022*

- Created an **open-source** Python library 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) *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/IamAdiSri/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 AIcrowd, a Kaggle-like competitive ML platform.
- **Winner** of Howzhack 2019, India's biggest online hackathon, and Megathon 2018, a national university-level hackathon.