ADITYA VYAWAHARE

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EDUCATION

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN   Champaign, IL
Master of Computer Science **(GPA: 3.95/4.0)**   Jan 2024 – May 2025
Courses: Distributed Systems, Cloud Computing Apps., Database Systems, Text Mining LLMs, DL for Computer Vision
Graduate Teaching Assistant - CS 498: Cloud Computing Applications

PUNE INSTITUTE OF COMPUTER TECHNOLOGY   Pune, India
B.E. Computer Engineering - **(CGPA: 9.24/10.0)**   Aug 2019 – Jun 2023
(Honors in Artificial Intelligence and Machine Learning)

SKILLS AND INTERESTS

Languages: Python, C/C++, SQL, HTML/CSS, Java
Libraries: LangChain, PyTorch, TensorFlow, fairseq, NLTK, Scikit-learn, Pandas, NumPy, OpenCV
Software Engineering: NodeJS, React, Flask, FastAPI, MongoDB, MySQL, Git, Docker, Kubernetes
Cloud & Big Data Technologies: AWS (S3, EC2, Lambda, DynamoDB, Glue, SageMaker), GCP, Hadoop, Apache Spark

WORK EXPERIENCE

School of Information Sciences, UIUC   Jun 2024 – Dec 2024
Graduate Research Assistant   Champaign, Illinois
- Developed a **full-stack app** for therapy video analysis using **React**, **FastAPI**, and **MongoDB**, enabling therapists to analyze client behavior with a **multimodal chatbot** powered by vision-language models **(Gemini, GPT-4o)**.
- Enhanced chatbot's interviewing capabilities for an emergency support application by **80%**, enabling victims to report incidents and receive critical assistance in real time.
- **Engineered a roleplaying chatbot** in GPT-4o for training police officers at UIUC using **few-shot prompt engineering** and chaining techniques to simulate **20+** unique victim emotions and incident scenarios.

L3Cube   Jun 2022 – Jun 2023
Machine Learning Intern   Pune, Maharashtra
- Created the first comprehensive public multi-domain Marathi **sentiment analysis** dataset consisting of **60,000** manually tagged samples across 4 domains- political and general tweets, movie reviews, and subtitles.   (Link)
- Proposed a **multi-domain model** attracting **300+** downloads every month on Hugging Face. (Link)

Pune Institute of Computer Technology   Oct 2021 – Jun 2023
Undergraduate Research Assistant   Pune, Maharashtra
- Researched unsupervised and supervised **machine translation** for Dravidian and Sorbian languages where we evaluated Transformer, LSTM, BiLSTM, Conv2Seq, back-translation, and fine-tuning approaches. Secured **1st** rank in ACL workshop.
- **Led** a team of **3** students to implement sentiment analysis of low-resource African languages at SemEval-2023.

AlgoAnalytics Pvt. Ltd.   Dec 2021 – May 2022
Software Engineering Intern   Pune, Maharashtra
- Engineered a Kivy-based mobile app to deliver real-time factory surveillance alerts and collaborated on a Tkinter-based desktop app to implement model-driven anomaly detection, enabling instant security notifications for rapid response.

PROJECTS

LEARNAI | Node.js, React, Express, MongoDB, Typescript, CSS, HTML, FastAPI, GPT-4o   Aug 2024 – Oct 2024
- Developed a full-stack application, including admin and student interfaces, enabling professors to upload course content and students to query the video content using vision-language models.
- Implemented **Retrieval-Augmented Generation (RAG)** and **LLM agents** to query uploaded course materials across multiple formats (documents, PDFs, links, PPTs), creating a personalized and effective learning environment.

AutoML Pipeline with Continuous Learning | AWS (SageMaker, Lambda, Step Functions, S3), Python, MLFlow   Feb 2025
- Engineered a **fully automated ML pipeline** that ingests and processes new data from Amazon S3, triggers model retraining, and seamlessly deploys updated models in near real-time, integrating **MLflow** for versioning and experiment tracking.
- **Led the design and development** of the project as part of the Cloud Computing curriculum, enabling **450+** students to gain hands-on experience with data ingestion, preprocessing, training, evaluation, versioning, and deployment on AWS.

PUBLICATIONS

L3Cube-MahaSent-MD: Multi-domain Marathi Sentiment Analysis Dataset & Transformer Models
Data-centric Machine Learning Research - **ICML 2023**   (Link)
PICT@DravidianLangTech-ACL2022: Neural Machine Translation On Dravidian Languages
The Second Workshop on Speech and Language Technologies for Dravidian Languages - **ACL 2022**   (Link)