

ADITYA VYAWAHARE

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EDUCATION

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

Master of Computer Science (**GPA: 3.95/4.0**)

Courses: Text Mining LLMs, Distributed Systems, Database Systems, Cloud Computing Applications

Champaign, IL

Jan 2024 – May 2025

PUNE INSTITUTE OF COMPUTER TECHNOLOGY

B.E. Computer Engineering - (**CGPA: 9.24/10.0**)

(Honors in Artificial Intelligence and Machine Learning)

Pune, India

Aug 2019 – Jun 2023

SKILLS AND INTERESTS

Languages: Python, C/C++, SQL, HTML/CSS, Java

Libraries: LangChain, PyTorch, TensorFlow, fairseq, NLTK, Scikit-learn, Pandas, NumPy, OpenCV, Tkinter, Kivy, Gradio

Software Engineering: NodeJS, React, Flask, FastAPI, MongoDB, MySQL, Git

Cloud & Big Data Technologies: AWS (S3, EC2, Lambda), GCP, Hadoop, Apache Spark, MapReduce

WORK EXPERIENCE

Social Computing Systems Lab | React, FastAPI, Gradio, Python, GPT-4o, Gemini, Huggingface

Research Assistant

Jun 2024 – Present

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 | Python, Pytorch, Huggingface

Machine Learning Intern

Jun 2022 – Jun 2023

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 | Python, Pytorch, Fairseq, GPT

Undergraduate Research Assistant

Oct 2021 – Jun 2023

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. | Python, PyTorch, OpenCV, Tkinter, Kivy, Git

Software Engineering Intern

Dec 2021 – May 2022

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 – Present

- 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.

GROCKIT | Node.js, React, Google Cloud Platform, HTML, CSS, Flask, GPT-2

Mar 2024 – Apr 2024

- Finetuned** GPT-2 to predict the customer's next grocery list based on past receipts, achieving a **16%** improvement in prediction accuracy over baseline models.
- Built Flask APIs to handle prediction requests from a Node.js backend, for generating real-time grocery list predictions.

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](#))