

# Atharva Dumbre

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## Education

New Jersey Institute of Technology | **M.S. in Computer Science** | GPA: 3.78 / 4.00

Sep2022 - May 2024

University of Mumbai | **B.E. in Computer Engineering** | GPA: 7.88 / 10.00

Aug 2018 - May 2022

## Skills

**Languages & Databases:** Python, SQL, Java, JavaScript, HTML, CSS, MySQL, Redis, MongoDB, FAISS Vector DB

**Tools & Frameworks:** Power BI, Tableau, Git, VS Code, Jupyter Notebook, React, Express.js, Node.js, Flask, OpenAI, Scikit-learn, TensorFlow, Keras, Pytorch, LangChain, Hugging Face, Pandas, NumPy, Matplotlib, Seaborn, XGBoost, NLTK, FastAPI, Streamlit, CUDA

**Cloud Technologies:** AWS, Azure, GCP, Docker, Apache Airflow, AWS Services (S3, Glue, Lambda, Athena)

**Management Skills:** Communication, Teamwork, Problem solving, Analytical reasoning, Attention to Detail, Time management

**Other:** Machine Learning, MLOps, Data Science, Regression, Classification, NLP (Natural Language Processing), LLM (Large Language Models), RAG (Retrieval Augmented Generation), Data Analysis, Time-series analysis, Agile Methodology, Version Control

## Work Experience

NJIT - Ying Wu College of Computing

Newark, NJ

**Research Assistant – Machine Learning Engineer**

Jan 2024 - May 2024

- Reduced vehicle waiting time by 9% for an **automated traffic light system** using Python and PyTorch reinforcement learning algorithms.
- Increased system readiness** by 67% by installing and testing SUMO and CARLA on 5 systems and incorporating supervisor feedback.
- Led a team to review 20+ research papers, **set documentation standards**, & set baseline comparisons, boosting project efficiency by 33%.
- Co-ordinated with researchers** in training deep learning models by annotating over 300 images of traffic intersections with 99% accuracy.

NJIT - Ying Wu College of Computing

Newark, NJ

**Graduate Teaching Assistant (CS656: Internet & Higher Layer Protocols)**

Sep 2023 - May 2024

- Boosted CS656 pass rate from 50% to 85%** through tutoring & doubt-solving sessions for 100+ students, using Python as support.
- Achieved a 70% reduction in grading time (from a week to 2 days) **by coordinating a team of 3 graders**, optimized grading process with Excel.
- Improved student compliance** of network protocols by 50% through 10+ Java and Wireshark assignments focused on OOP concepts.

AICTE - EduSkills Foundation

Remote

**AI-ML AWS Intern**

Oct 2021 - Dec 2021

- Administered 75% of common student queries autonomously using an **NLP chatbot** developed and deployed with AWS Lex & AWS Lambda.
- Slashed student inquiry response time by 80% **via integration with university support services**, measured by average response time metrics.
- Grew student satisfaction** with support services by 30% as measured by post-interaction survey scores, by improving chatbot interface.

## Projects

**YouTube Trending Videos Data Engineering & Analysis** – AWS | Power BI | SQL | DAX

- Implemented an ETL pipeline using AWS (S3, Glue, Lambda, Athena, CloudWatch) to process & analyze over 70,000 YouTube Trending Videos records for 3 countries (USA, Canada, Great Britain), converting JSON to Parquet & created a Power BI dashboard with 5 KPIs & trends. [Link](#)

**Fintech - Company Bankruptcy Predictor** – Python | Pandas | Numpy | Matplotlib | Sklearn | Pickle

- Built a predictive ML model to predict the bankruptcy of a company using Python for data cleaning, analysis, & visualization. Attained 96.18% accuracy with the help of the Random Forest Classifier algorithm & presented the findings in the form of a presentation. [Link](#)

**IoT - Fire Alarm Detection**– Python | Pandas | Numpy | Sklearn | Matplotlib | Seaborn

- Devised a machine learning algorithm stack (scikit-learn) along with imbalanced class handling techniques to analyze IoT sensor data for smoke detection. This approach achieved 99.8% accuracy in fire alarm prediction using simulated IoT sensor data. [Link](#)

**PDF Chat with RAG System** – Python | Streamlit | LangChain | HuggingFace | FAISS

- Developed a chatbot using Streamlit to convert PDFs into a searchable knowledge base with the FAISS vector database, LangChain, & Google's T5 LLM with average query retrieval in 4 seconds. [Link](#)

**AI Logo Generation Platform ([creative-dalle.com](https://creative-dalle.com))** – MERN (Mongo, Express.js, React, Node.js) | OpenAI | Hostinger | Cloudinary

- Launched a custom logo generation platform utilizing OpenAI's DALL-E 3 model to generate logos with prompts tuned to industry standard designs, featuring "Surprise Me," social sharing, & keyword search; ensured 99.9% uptime with Render.com & Hostinger.com cloud hosting & served images to users via the Cloudinary platform. [Link](#)

## Research Publication

- Classification Of Indian Sign Language Characters Utilizing Convolutional Neural Networks & Transfer Learning Models With Different Image Processing Techniques (IEEE) | [Link](#) Electronic ISBN:978-1-6654-7988-2

## Certificates & Achievements

- AWS Cloud Practitioner | TensorFlow Developer Certificate | LLaMa for Developers (LinkedIn) | Neural Networks & Deep Learning (Coursera) | HTML, CSS, & Javascript for Web Developers (Coursera) | Building Web Applications in PHP(Coursera) | Fundamentals of Deep Learning for Computer Vision (NVIDIA) | Introduction to AI in the Data Center (NVIDIA) | CCNA: Introduction to Networks | Cisco Cybersecurity Essentials
- Completed **Foundations of Machine Learning and Applications Bootcamp** at IIT Mandi in Sep 2021.
- Secured 1st place for "Most Creative Use of Redis Cloud" at HackNJIT Oct 2023 | **Kaggle Expert (3647 Highest Rank)**