

SHREYA AGRAWAL

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SUMMARY

Computer Engineering graduate with a specialization in Artificial Intelligence, possessing practical experience in Artificial Intelligence, Machine Learning, Computer Vision, and Natural Language Processing. Demonstrated expertise in developing intelligent pipelines utilizing technologies such as YOLO, GPT-4o, LangChain, and TensorFlow. Proven track record of delivering scalable, efficient solutions and contributing to research initiatives in areas including facial recognition and smart agriculture.

EXPERIENCE

TSS Consultancy Pvt Ltd, Rajkot, Gujarat
Associate Software Engineer - AI

May 2024 – Present

Ongoing Project:

- Delivered enterprise-grade document classification using YOLOv11m, achieving 100% accuracy on noisy real-world data.
- Built and deployed **custom web crawlers** using **Scrapy**, automating large-scale data collection pipelines from diverse sources for downstream AI tasks.
- Developed and optimized **text embeddings** using **OpenAI, SentenceTransformers** enabling **cosine-similarity-based document retrieval** and semantic search.
- Performed robust OCR and document layout understanding using GPT-4o and Gemini 2.0, including extraction of tables, forms, and multi-column text from complex layouts.
- Architected AI pipelines integrating OCR, LLMs, and retrieval frameworks, aligned with Retrieval-Augmented Generation (RAG) and agent workflow architectures.

Software Development Intern

Dec 2023 – Apr 2024

- Assigned to build a solution for efficient data extraction and integration between frameworks.
- Engineered a PDF-to-JSON conversion service leveraging PDF-Box to extract and transform content from uploaded PDF files. Established an API-based connection between Spring Boot and Flask frameworks to enable seamless data interchange.
- Delivered an efficient data extraction and integration service, streamlining the process of handling PDF content and improving interoperability between frameworks.

PROJECTS

ComplyNext – AI Powered Regulation Aware Agent

- Developing an **Agentic AI system** that autonomously monitors RBI, SEBI, and MCA circulars, interprets regulatory updates using **RAG (Retrieval-Augmented Generation)**, and recommends business actions in plain English.
- Automated compliance workflows, reducing manual review time and **audit risk by up to 40%**, enabling fintechs to stay updated on evolving financial regulations.
- Built using **Python, LangChain, Streamlit, AI/ML**, and integrated with databases for real-time regulatory tracking and alert generation.

Academic Advisor using RAG

- Developed an intelligent academic advisory system using **Retrieval-Augmented Generation (RAG)** for personalized guidance.
- Integrated **LangChain** to orchestrate prompt workflows, combining semantic search with dynamic decision-making.
- Designed prompt strategies and conversational flows to deliver human-like interaction via a Flask-based web interface.

Automatic AI-Based Self-Driving and Smart Tractor for Agriculture

- Designed a smart agricultural system to identify crop diseases like blight, rust, or fungal infections for efficient farming.
- Developed a Convolutional Neural Network (CNN)-based crop disease detection model using ResNet50. Trained the model on a dataset of 100,000+ images spanning 60 crop and disease classes, applying data augmentation techniques (flipping, rotation, contrast adjustments) to improve model robustness.
- Achieved 96% accuracy in detecting crop diseases under varying lighting conditions, significantly aiding farmers in early disease detection.
- Fine-tuned **YOLOv8** object detection on handpicked navigation images to enhance autonomous path planning.

EDUCATION

Marwadi University, Rajkot, Gujarat

April 2025

Bachelor of Technology, *Computer Engineering (Artificial Intelligence)*

- CGPA: 8.63/10.00
- Tech Lead at Google Developer Student Clubs (GDSC), Marwadi University
- Core Committee Member, MU FEST 2024
- Organized and anchored events such as Google Campus AI Fest

SKILLS

AI/ML & Deep Learning: TensorFlow, Keras, Scikit-Learn, ResNet50, YOLOv8/v11m, FaceNet, VGGFace

Natural Language Processing: LangChain, NLTK, SpaCy, Retrieval-Augmented Generation (RAG)

Software Development: Python, SQL, Spring Boot, Flask, REST APIs

Big Data & Tools: MongoDB, PostgreSQL, Power BI, Tableau

DevOps & Versioning: GIT, VSCode

Soft Skills: Client-facing communication, Solution Design, Team Leadership (GDSC Tech Lead)

PUBLICATIONS

Research Paper:

- **Title:** *Advancing Attendance Monitoring: A Machine Learning Driven Approach through Facial Recognition*
- **Publication:** Published in SCOPUS Indexed Springer Book Series, Lecture Notes in Networks and Systems.

Book Chapter:

- **Title:** *Securing the Foundations: IoT Infrastructure in Smart Cities*
- **Publication:** Submitted for the book Secure and Intelligent IoT-Enabled Smart Cities, published by IGI Global.

Book Chapter:

- **Title:** Crafting the Future: OpenAI's Strategies and Sustainable Innovation
- **Publication:** Published by IGI Global.

HONORS & AWARDS

Student Startup and Innovation Policy Hackathon 2022:

- Achieved Finalist Status in SSIP 2022 by delivering a solution to a problem statement provided by the Ministry of Food and Agriculture Department – December 2022.

CERTIFICATIONS

- [Machine Learning with Python – IBM \(Coursera\)](#)
- [Data Analytics Essentials- Cisco Networking Academy](#)
- [AI for Everyone – DeepLearning.AI \(Coursera\)](#)
- [Introduction to Data Mining – Infosys \(Coursera\)](#)
- [AWS Academy Cloud Foundations – AWS Academy Graduate](#)
- [Oracle Database Programming with SQL – Oracle](#)
- [Google Analytics – Infosys](#)