

# SHREYA AGRAWAL

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## SUMMARY

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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

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**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

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### 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

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**Marwadi University**, Rajkot, Gujarat

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

April 2025

- 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

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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

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### 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

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### 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

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- [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](#)