

# VENKATASAIKUMAR ERLA

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## PROFESSIONAL SUMMARY

Master's student in Data Science at the University of New Haven (expected 2026), with strong foundations in machine learning, deep learning, and natural language processing. Skilled in Python, SQL, R, TensorFlow, and AWS cloud services, with hands-on experience developing AI-driven projects including RAG systems, intelligent agents, text summarization, and sentiment analysis. Passionate about applying AI/ML to solve real-world problems and seeking opportunities to contribute to innovative solutions in the tech industry.

## CORE COMPETENCIES & TECHNICAL SKILLS

- Programming & Data Science: Python · R · SQL · Scikit-learn · TensorFlow · NLTK · SpaCy
- Machine Learning & AI: NLP · Deep Learning (LSTM, Neural Nets) · Predictive Modeling · RAG Systems · Generative AI
- Data Visualization & Tools: Tableau · Matplotlib · Pandas · NumPy
- Cloud & Big Data: AWS (S3, Athena, Glue basics) · Hadoop (academic exposure)
- Collaboration & Workflow: GitHub · Jupyter Notebook · FastAPI · LangChain · ChromaDB · Agile/Scrum

## EDUCATION

### University of New Haven – Tagliatela College of Engineering | West Haven, CT

Master of Science in Data Science | Expected May 2026

Dean's Scholarship recipient for academic excellence

### Chalapathi Institute of Engineering & Technology | Lam, India

Bachelor of Technology in Computer Science and Engineering | 2020 – 2024

## DATA & AI PROJECTS

### AI Job Agent – Intelligent Job Hunting Automation (2025)

- Developed a Python-based AI Agent that automates the end-to-end job application process.
  - Utilized Requests and BeautifulSoup4 to fetch and parse job listings and career pages.
  - Employed NLTK for keyword extraction and resume-job matching, and python-docx to dynamically generate customized resumes and cover letters.
  - Integrated Playwright for browser automation and Pandas/Openpyxl for structured job tracking and reporting.
  - Designed to streamline applications across multiple portals, improving efficiency and consistency in job submissions.
- GitHub: [github.com/phoneixvenkat/ai-job-agent](https://github.com/phoneixvenkat/ai-job-agent)

### RAG-Based Document Assistant – Context-Aware Q&A; System (2025)

- Built a Retrieval-Augmented Generation (RAG) system using LangChain and Sentence Transformers for document-based question answering.
- Implemented PDF parsing, vectorization, and context retrieval to provide accurate, real-time answers from uploaded documents.
- Integrated ChromaDB for vector storage and FastAPI for backend API endpoints.
- Designed scalable architecture supporting query, upload, and deletion endpoints for enterprise use.
- Demonstrated 90%+ context relevance improvement compared to baseline QA models.

#### **Text Summarization Using NLP – Extractive Framework with Web-Based Interaction (2024)**

- Developed an extractive text summarization model using Python, NLTK, and SpaCy.
- Built a web interface for real-time interaction, improving accessibility for non-technical users.
- Achieved ROUGE-score gains of 12% compared to baseline models.

#### **Sentiment Analysis of Social Media Data (2024)**

- Applied LSTM deep learning models to classify sentiment in large-scale Twitter datasets.
- Achieved 85% accuracy and visualized sentiment trends using Tableau.
- Provided insights into public opinion patterns over time.

## **LANGUAGES**

English (Fluent) · Telugu (Native) · Hindi (Intermediate)