

ABHINAV KAPAVARAPU

786-585-6929 | a.kapavarapu@ufl.edu | [linkedin.com/in/abhinav-kapavarapu](https://www.linkedin.com/in/abhinav-kapavarapu) | github.com/Abhinav8520

EDUCATION

University of Florida, Gainesville, FL <i>Masters in Computer and Information Science and Engineering</i>	08/2023 - 05/2025 CGPA: 3.93/4.0
Anurag Group of Institutions, Hyderabad, India <i>Bachelors in Electronics and Communication Engineering</i>	08/2019 - 06/2023

EXPERIENCE

The Hackett Group <i>Project Trainee Intern</i>	03/2023 - 06/2023 Hyderabad, India
<ul style="list-style-type: none">Built end-to-end ML solutions incl. Sentiment Analysis on 500+ reviews and Market Mix Modeling with 10+ sales drivers.Cleaned and processed complex business datasets using advanced feature engineering to improve model performance.Implemented diverse NLP techniques to boost accuracy and interpretability in customer review analysis.Installed end-to-end ML backend on AWS EC2 as RESTful APIs to enable scalable, production-grade access.Analyzed cross-sectional employee data to uncover key stress-related factors impacting workplace dynamics.	

PROJECTS

AI Study Tutor Agent <i>Python, FastAPI, React, OpenAI, FAISS</i>	06/2025 - 07/2025
<ul style="list-style-type: none">Developed an AI tutor with FastAPI backend and React frontend for document-based Q&A and quiz generation across 3 file formats.Spearheaded RAG using Sentence Transformers and FAISS, enabling sub-second semantic search over embedded text chunks.Integrated GPT-3.5-turbo for contextual answers and auto-generated 50+ MCQs with adaptive feedback.Tracked progress via Firebase Firestore to identify weak topics, boosting concept revision by 2x.Deployed full-stack app on Render.com with scalable FastAPI and React services for real-time, cross-platform access.	
Research Paper Summarization and Query Answering System <i>Python, T5, FAISS, GPT-3.5, spaCy</i>	01/2025 - 02/2025
<ul style="list-style-type: none">Fine-tuned T5-small on 75k documents for abstracted summarization using step size 3e-4, batch size 4, for 3 epochs.Achieved ROUGE-1: 16.68 and ROUGE-2: 5.84, indicating strong summary generation.Designed RAG using FAISS and Sentence-Transformer embeddings for fast, context-aware summary retrieval.Enhanced summary quality and contextual relevance by integrating retriever-generated context with OpenAI GPT-3.5.Launched an interactive QA system with spaCy-powered pre-processing and a lightweight Streamlit interface.	
Food Delivery Web Application <i>React, HTML, CSS, Node.js, Express, MongoDB</i>	09/2024 - 10/2024
<ul style="list-style-type: none">Designed a responsive UI in React, HTML, and CSS with menu filtering, checkout flow, and an engaging homepage.Developed backend services using Node.js, Express, and MongoDB Atlas with scalable RESTful APIs.Implemented secure JWT-based authentication and role-based authorization for protected user operations.Deployed the frontend on Vercel and backend on Railway for seamless, cloud-based accessibility.Integrated an AI chatbot using GPT-3.5 Turbo to deliver personalized food suggestions and real-time support.	
Personalized News Categorization <i>Python, Flan-T5-base, spaCy</i>	02/2024 - 04/2024
<ul style="list-style-type: none">Created a personalized news system using a RAG-like architecture in PyTorch for targeted retrieval and summarization.Fine-tuned Flan-T5-base via Hugging Face at 3e-4 for 3 epochs, improving accuracy by 50%.Enhanced retrieval with the BM25 algorithm to better align results with user preferences.Applied synonym-based query expansion, achieving an additional 10% gain in retrieval accuracy.Benchmarked pipeline variants to evaluate impact of fine-tuning and synonym expansion.	

TECHNICAL SKILLS

Programming Languages: Python, C, Java, F#, SQL, JavaScript

Web Development: HTML, CSS, React, Node.js, Express

Backend Frameworks: FastAPI, Django, JWT, Axios

Machine Learning: Pandas, NumPy, Matplotlib, Seaborn, Scikit-learn, TensorFlow, PyTorch, OpenCV, Hugging Face, FAISS, RAG

Cloud & DevOps: AWS, IBM Cloud, Firebase, Docker, Render, Vercel, Railway

Databases & Tools: MongoDB, MySQL, GitHub, VS Code, Postman, Microsoft Office

Certifications: AWS Certified Cloud Practitioner, NVIDIA Certified - Building Transformer-Based NLP Applications, NVIDIA Certified - Fundamentals of Deep Learning