ABHINAV KAPAVARAPU

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EDUCATION

University of Florida, Gainesville, FL   **Aug 2023 - May 2025**
Masters in Computer and Information Science and Engineering   *CGPA: 3.92/4.0*

Anurag Group of Institutions, Hyderabad, India   **Aug 2019 - Jun 2023**
Bachelors in Electronics and Communication Engineering   *CGPA: 8.06/10*

EXPERIENCE

The Hackett Group   **Mar 2023 - Apr 2023**
Project Trainee Intern   *Hyderabad, India*

- Gained practical **Machine Learning** expertise through projects such as **Sentiment Analysis** using around 500 customer reviews to interpret sentiments and **Market Mix Modeling** to analyze around 10 key sales drivers, showcasing strong analytical skills.
- Completed a project analyzing around 100 employee records to identify stress triggers, utilizing data analytic tools to highlight potential stress factors, contributing to ongoing research on workplace wellness.

PROJECTS

Food Delivery Web Application | *React, HTML, CSS, Node.js, Express, MongoDB*   **Oct 2024**

- Designed a responsive frontend using **React, HTML, and CSS**, featuring an engaging **home page**, **menu filtering by category**, and a **checkout page**, enhancing user experience.
- Developed backend architecture with **Node.js and Express**, creating robust **RESTful API endpoints** to efficiently process user requests and retrieve data from **MongoDB Atlas**.
- Implemented secure **authentication and authorization** workflows via **JSON Web Tokens (JWT)**, enabling users to **sign up**, **log in**, and maintain sessions during transactions.
- Integrated an **AI chatbot** powered by **OpenAI GPT-3.5 Turbo API** to provide **personalized food recommendations** and address **user queries**, enhancing user engagement.

Personalized News Categorization | *Python, Natural Language Processing (NLP), Large Language Models*   **Apr 2024**

- Developed a personalized news delivery system based on **Retrieval-Augmented Generation (RAG)**, tailoring content retrieval to align with user profiles.
- Enhanced news categorization and user-specific content distribution by applying **prompt generation** techniques and fine-tuning the **Flan-T5-base model** with a learning rate of 3e-4 over 3 epochs, optimizing model performance and user engagement.
- Improved the retrieval mechanism through the **BM25 algorithm**, ensuring alignment between user preferences and news content while optimizing model performance.

Remote Sensing Image Captioning using Deep Learning | *Python, Pandas, TensorFlow*   **Mar 2024**

- Led a deep learning initiative to generate precise and contextually relevant captions for a dataset of 1,680 remote sensing images, improving the interpretability of complex spatial data.
- Implemented **Convolutional Neural Networks (CNN)** featuring the **RESNET 152** architecture for feature extraction and integrated them with **Long Short-Term Memory (LSTM)** units in **Recurrent Neural Networks (RNN)** to produce coherent image captions, leveraging **TensorFlow** for development.
- Assessed the model's performance rigorously with industry-standard metrics, achieving a **BLEU-1 score of 0.7** and **CIDEr score of 2.38**, ensuring both accuracy and contextual relevance in the captions.

Twitter Clone | *Python, Django, HTML, CSS, and Bootstrap*   **Nov 2023**

- Engineered a comprehensive Twitter clone on the **Django** framework, embedding core functionalities such as user profiles, follow/unfollow system, and tweet management (add, edit, delete).
- Utilized **HTML, CSS**, and **Bootstrap** to create an interactive and responsive user interface.
- Enhanced multimedia features, allowing users to create profiles with images and engage with tweets through actions such as liking, unliking, and sharing.
- Designed and achieved a robust search functionality to efficiently retrieve tweets, showcasing expertise in programming and algorithms with **Python and Django**.

TECHNICAL SKILLS

Languages: Python, C, Java, F#, SQL, JavaScript
Web Frameworks and Databases: Node.js, Express, React, Django, HTML, CSS, MongoDB, MySQL
Tools and Cloud Technologies: AWS, IBM Cloud, GitHub, VS Code, Postman, Android Studio, Microsoft Office