ANJALI CHENNUPATI
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IEEE-recognized research author aspiring to pursue a Master's in Computer Science Engineering with a focus on AI/ML, aiming to gain expertise in Machine Learning and Big Data Analytics. Passionate about contributing to cutting-edge technology, with the long-term goal of excelling as a Machine Learning Engineer.

ACADEMIC QUALIFICATION

Amrita Vishwa Vidyapeetham, Bengaluru **September 2021 – Present**
Bachelor of Technology in Computer Science Artificial Intelligence (Major) CGPA – 8.66/10

ACADEMIC PROJECTS

Title: Serverless Blogging Platform using AWS Services
[Amrita Vishwa Vidyapeetham, Bengaluru] **October 2024 – November 2024**
Team Size: 4 **Role:** Team Lead and Coder
Summary/Description:
This project is a serverless blogging platform built on AWS, leveraging AWS Lambda, API Gateway, and DynamoDB to provide an efficient and scalable blogging solution. Designed a dynamic front end using React.js to enable seamless blog management, including CRUD operations such as creating, reading, updating, and deleting blogs. Integrated API Gateway as the intermediary to securely manage HTTP requests and Lambda functions for backend logic execution. Researched and implemented scalable solutions using DynamoDB to store and retrieve blog data with minimal latency. Overcame challenges in managing backend operations by adopting a fully serverless architecture. The platform achieved a 40% reduction in operational costs compared to traditional server-based approaches, ensuring high availability and responsiveness.

Title: Ad Placement Optimization using RAG and LLMs
[Amrita Vishwa Vidyapeetham, Bengaluru] **April 2024 – May 2024**
Team Size: 4 **Role**: Team Lead, Primary author and Coder
Summary/Description:
This project is an advanced system to optimize targeted advertising campaigns using Retrieval-Augmented Generation (RAG) and Large Language Models (LLMs). Integrated web scraping technologies to extract relevant domain-specific data and incorporated AI-generated imagery to create engaging content. Researched and developed the pipeline, embedding and indexing documents with FAISS to train the RAG framework effectively. Addressed hallucination issues in LLMs by implementing domain-specific fine-tuning and adaptive retrieval techniques. Utilized advertisement strategy PDFs from the IIM website and Google as data sources. Developed a functional website that accepts user input, provides optimized advertisement strategies, and generates ad-ready images using the DALL-E image generator. The project has been accepted as a research paper by IEEE and is currently in the process of publication.

Title: Comparative Analysis of Bitcoin Price Prediction Models: LSTM, BiLSTM, ARIMA and Transformers
[Amrita Vishwa Vidyapeetham, Bengaluru] **April 2024 – May 2024**
Team Size: 4 **Role**: Team Member, Primary author and Coder
Summary/Description:
This project is a comparative analysis of Bitcoin price prediction models, focusing on LSTM, BiLSTM, ARIMA, and Transformers. Developed and tested multiple models to forecast Bitcoin price movements using time-series data. Researched and implemented LSTM and BiLSTM for sequential data modeling, while using ARIMA for traditional statistical approaches. Incorporated Transformers to capture long-range dependencies in the data and improve prediction accuracy. Evaluated the models based on root mean square error (RMSE) and mean absolute error (MAE) to assess performance. Overcame challenges related to data volatility and noise, optimizing hyperparameters and fine-tuning the models to handle real-time financial data. The project has been accepted and published as a research paper by IEEE.

Title: AI Enhanced Image to Audio Encryption
[Amrita Vishwa Vidyapeetham, Bengaluru] **November 2023 – January 2024**
Team Size: 3 **Role**: Team Lead, Primary author
Summary/Description:
This project is an AI-enhanced image-to-audio encryption system that integrates steganography and audio encryption. Employed the usage of steganography, concealing a secret image within a cover image to create a steganographic image. Researched and developed the project using deep learning convolutional neural network technologies like Hide-Net and

Reveal-Net for the steganography process. Demonstrated proficiency in neural network architecture and showcased strong research capabilities. Overcome challenges associated with choosing the right framework and combination of neural networks to ensure the desired outcome. Developed a comprehensive system that effectively combines visual and auditory encryption, offering versatile communication and data protection applications. The project has been accepted and published as a research paper by IEEE.

Title: Stock prediction model using XGBoost algorithm and sentiment analysis using Spark [Amrita Vishwa Vidyapeetham, Bengaluru] **November 2023 – January 2024**
Team Size: 3 **Role:** Team Lead, Primary author, and Coder
Summary/Description:
This project is a web scraping application model integrated with Spark to enhance stock market predictions and sentiment analysis. Employed the usage of sentiment-laden news articles and financial websites for intraday stock data. Researched and developed the project using technologies of web scraping, machine learning and sentiment analysis. Demonstrated skill in training the XG Boost machine learning algorithm and showcased robust research skills. Overcame challenges associated with integrating the two separate segments of sentiment analysis with machine learning to give a precise stock prediction. Developed a model whose performance is evaluated for future value predictions based on the average RMSE score reported as 1.2479. This project has been accepted and published as a research paper by IEEE.

Title: A complete MERN application for Supply Chain Management using Blockchain [Amrita Vishwa Vidyapeetham, Bengaluru] **November 2023 – January 2024**
Team Size: 3 **Role:** Team Lead, Primary author and Coder
Summary/Description:
This project is a full-stack MERN application that demonstrates the implementation of a real-time application of Supply Chain Management using Blockchain. Employed the usage of GI Tagging for product authentication. Researched and developed the project leveraging technologies like NodeJs, MongoDB, ExpressJs, and React. Demonstrated proficiency in JavaScript and showcased strong research capabilities. Overcame challenges associated with integrating the four mentioned platforms into a single project, ensuring smooth workflow and error resolution. Developed a fully functional MERN application that offers a real-time framework for Supply Chain Transparency between consumers and producers. The project has been accepted and published as a research paper by IEEE and is currently in the process of patent approval.

Title: Real time object detection using Markov Random Fields: Video Anomaly Detection
[Amrita Vishwa Vidyapeetham, Bengaluru] **October 2023 – January 2024**
Team Size: 3 **Role:** Team Member, Primary author
Summary/Description:
This project is a robust system for video anomaly detection, combining frame extraction image segmentation with Markov Random Fields (MRFs) and autoencoders to enhance surveillance accuracy. Employed image segmentation and binary mask generation. Researched and developed the project using technologies such as Markov Random Fields and Autoencoders. Demonstrated skill in framework generation and exhibited exceptional research abilities. Overcame challenges associated with choosing the right set of algorithms to specifically tell which frame in a video causes the anomaly. Developed a model that is an innovative fusion of MRFs and autoencoders that achieves a 60% reduction in computation time compared to traditional methods, offering a refined approach to video anomaly detection. This project has been accepted and published as a research paper by IEEE.

Title: Distributed web crawler on Hadoop framework
[Amrita Vishwa Vidyapeetham, Bengaluru] **June 2023 – August 2023**
Team Size: 3 **Role:** Team Lead, Primary author and coder
Summary/Description:
This project involves developing a distributed web crawling system using the Hadoop MapReduce framework, providing a robust solution for handling extensive web data analysis. Employed the usage of parallel processing of a cluster of interconnected computing nodes via multiple Virtual Machines. Researched and developed the project using technologies of Hadoop Distributed File System (HDFS) and MapReduce framework. Demonstrated skill in integrating the MapReduce framework into the cluster of interconnected nodes and impressive research prowess. Overcame challenges associated with setting the environment locally to test and the proposed model of web crawling. Developed a model that showcases its scalability, parallel programming, and distributed computing capabilities, demonstrating an efficient approach to web data analysis. This project has been accepted and published as a research paper by IEEE.

INTERNSHIPS

AI/ML Intern **February 2024 – May 2024**

ClearSpot.ai, Bengaluru

Worked a team lead on projects including real-time 2D Mapping, Object Detection using PyTorch, Solar Thermal Inspection, and Horizon Grant Proposal. Conducted in-depth research on various algorithms. Drafted proposal for the international grant draft, dataset collection, and analysis.

Machine Learning Intern **July 2023 – August 2023**

Combat Aircraft System Development and Integration Centre, DRDO, Bengaluru

Implemented the application of a Sequential Difference algorithm in Python to proficiently deinterleave incoming radio signals for the electronic warfare unit. Concurrently, engineered a Neural Network model aimed at discerning intricate patterns in the time of arrival and pulse width of signals.

PUBLICATIONS

- A. Chennupati, B. Prahas, B. A. Ghali, B. D. Jasvitha and K. Murali, "Comparative Analysis of Bitcoin Price Prediction Models: LSTM, BiLSTM, ARIMA and Transformers," *2024 15th International Conference on Computing Communication and Networking Technologies (ICCCNT)*, Kamand, India, 2024
- A. Chennupati, B. Prahas, B. A. Ghali and T. V. Nidhin Prabhakar, "AI-Driven Image-to-Audio Encryption with Data Hiding," *2024 15th International Conference on Computing Communication and Networking Technologies (ICCCNT)*, Kamand, India, 2024
- A. Chennupati, B. Prahas, B. A. Ghali, S. B and R. M, "Design and Development of a Secured Framework equipped with GI Tagging and Blockchain for Enhanced Data Security and Transparency in Healthcare Operations, for Effective Management of Resources in Government Hospitals," *2024 International Conference on Computational Intelligence and Computing Applications (ICCICA)*, Samalkha, India, 2024
- A. Chennupati, B. Prahas, B. A. Ghali and M. K, "Real Time Object Detection using Markov Random Fields: Video Anomaly Detection," *2024 5th International Conference for Emerging Technology (INCET)*, Belgaum, India, 2024
- A. Chennupati, B. Prahas, B. A. Ghali and M. Venugopalan, "Integrative Day Trading Stock Trend Prediction using Web Scraping and Sentiment Analysis," *2024 IEEE 9th International Conference for Convergence in Technology (I2CT)*, Pune, India, 2024
- A. Chennupati, B. Prahas, B. A. Ghali and M. Venugopalan, "Scalable Web Crawling: Harnessing the Power of Hadoop MapReduce in a Distributed Framework," *2023 Global Conference on Information Technologies and Communications (GCITC)*, Bangalore, India, 2023

TECHNICAL SKILLS

- **Programming Languages:** Java
- **Web Development:** HTML, CSS
- **Big Data Technologies:** Hadoop, Spark
- **Cloud Computing:** Amazon Web Services (AWS) Fundamentals

CERTIFICATIONS

- AWS Certified Cloud Practitioner. August 2023 - October 2023
- AWS Trainings and Certifications – Introduction to Artificial Intelligence. January 2024 - February 2024
- AWS Academy Graduate – AWS Academy Cloud Foundations. January 2024 - February 2024
- AWS Academy Graduate – AWS Academy Machine Learning Foundations. January 2024 - February 2024
- AWS Educate - Machine Learning Foundations. January 2024 - February 2024
- AWS Educate – Introduction to Cloud 101. January 2024 - February 2024
- AWS Educate – Getting Started with Security. January 2024 - February 2024
- AWS Educate – Getting Started with Cloud Ops. January 2024 - February 2024
- AWS Educate – Getting Started with Compute. January 2024 - February 2024
- AWS Educate – Getting Started with Storage. January 2024 - February 2024
- AWS Educate – Getting Started with Networking. January 2024 - February 2024
- The Web Developer Bootcamp 2024. January 2023 - May 2023

EXTRACURRICULAR

Executive, Dhwani – The Literary Club [Amrita Vishwa Vidyapeetham, Bengaluru] **September 2021 – March 2024**

Actively participated in literary discussions, workshops, and events organized by the club. Contributed written pieces, poetry, or articles for club events. Successfully hosted an inter-departmental web event—a debate competition themed on Mahabharata which attracted diverse participation and enriched the intellectual discourse on campus.

Technical Executive, GeeksforGeeks Student Chapter ASEB **September 2022 - April 2024**

Actively took part in the coding activities and technical events and workshops conducted by the club. Contributed technical expertise in areas of personal interest such as Machine Learning and Big Data Analytics for club events.

Public Relations Team Lead

Dastaan – Techno Management Fest 2023 [ASEB] **November 2023 - December 2023**

Collaborated with a team of ten members to plan and execute publicity campaigns for Dastaan'23, a prominent annual event organized by Amrita Vishwa Vidyapeetham, Bengaluru. Developed and implemented communication strategies to promote the fest and demonstrated strong interpersonal skills and attention to detail in maintaining positive relationships with stakeholders and resolving any issues effectively.