

KARTHIKEYA SARRAJU

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Education

Master of Science in Artificial Intelligence | University at Buffalo, NY

Expected Dec 2023

- Course work: Machine Learning, Deep Learning, Pattern Recognition, Natural Language Processing and Text Mining, Big Data Analytics, Computer Vision and Image Processing

Skills

- Programming and Databases: Python, R, SQL
- Data Analysis and Visualization: Numpy, Pandas, Matplotlib, Seaborn, Tableau
- Machine Learning Frameworks: TensorFlow, Keras, Scikit-learn, PyTorch
- Natural Language Processing (NLP): NLTK, SpaCy, RNN, Large language Models, Hugging face, Prompt Engineering
- Computer Vision: OpenCV, Image Processing, CNN, VGG, YOLO, Object Detection and Recognition
- Cloud & Dev Tools: AWS, Amazon Redshift, BigQuery, Google Cloud Platform, Git, JIRA, Visual Studio
- Project Management: Project Planning, Task Management, SCRUM & Agile methodology, Data Management

Experience

Real-time Vehicle Counting on Highways using YOLO and Faster R CNN Algorithms

May 2023 – Jul 2023

- Developed a real-time vehicle counting system on highways using YOLOV8 and Faster R-CNN algorithms for efficient traffic management and congestion control.
- Real-time highway video streams were processed, and object detection techniques were employed to accurately count the number of vehicles.

Authorship Attribution for Neural Text Generation (Natural language processing)

Feb 2023 – May 2023

- Led a team of 4 in investigating authorship attribution for synthetically generated text using neural text generation methods.
- Designed and implemented architectures based on LSTM and BiLSTM models with GloVe embeddings and POS tags.

Hand Gesture Recognition (Computer Vision and Image processing)

Feb 2023 – May 2023

- Engineered a model to recognize daily life hand gestures such as thumbs up, thumbs down, finger counting, and victory using multiple datasets.
- Configured model to process data from webcams or uploaded images, advancing real-time gesture recognition.

Data Analyst | Tech Mahindra, Hyderabad, India

Jun 2019 – Jul 2022

- Improved digital marketing campaign efficiency such as search relevance, text annotation, image annotation for SEO, resulting in a 3% accuracy increase in the German team.
- Pioneered data validation and categorization techniques, boosting Bing's search result relevancy rate by 4%.
- Collaborate with cross-functional teams to define and prioritize data requirements, ensuring alignment with business goals.
- Leveraged expertise in Python, data analysis, machine learning, and artificial intelligence to drive project success.

Projects

Implemented Optical Character Recognition (OCR) and Object Classification

- Employed AlexNet, a Convolutional Neural Network (CNN) architecture, for Optical Character Recognition on OCTMNIST and Image Classification on the ImageNet dataset. Enhanced the efficiency of the classification tasks through optimization techniques.

Predictive Modeling for Time-Series Data

- Applied Recurrent Neural Networks (RNN) and Long Short-Term Memory (LSTM) networks for forecasting the New York City Taxi Trip Duration. The developed model effectively captured time-dependent patterns and fluctuations, leading to accurate predictions.

Sentiment Analysis on IMDB Movie Reviews

- Implemented LSTM, biLSTM, and RNN techniques to create a model that correctly identifies review sentiments on IMDb.

Anomaly Detection on Cloud Server Data

- Designed and trained an Autoencoder model to detect anomalies in the CPU usage data collected from Amazon Web Services (AWS). This predictive maintenance model allows proactive monitoring, identifying potential issues before they escalate.

Adaptive Machine Learning with Transfer Learning

- Utilized pre-trained models (ResNet, VGG, DenseNet) in a transfer learning framework for image classification tasks on the Food-11 dataset. The project demonstrated the effectiveness of transfer learning in achieving superior performance with less data and computational resources.

Certifications

- Generative AI learning path, Google Cloud
- Prompt Engineering for Generative AI, LinkedIn Learning

Campus Involvement

- Member, Google Developer Student Club
- Specializing in Cloud Computing, Data Engineering, Big Query ML & Vertex AI