Aaditey Pillai

aaditey.pillai@duke.edu | LinkedIn | Github | (224) 284-5901

Education

Duke University (GPA - 4.0/4.0) Durham, NC
Master of Engineering in Artificial Intelligence August 2024 - May 2026
Coursework : Github, Cloud Computing, LLMs, Deep Learning Applications, Modeling Process & Algorithms

SRM Institute of Science and Technology (GPA - 9.34/10.0) Chennai
Bachelor of Technology in Electronics & Communications Engineering June 2019 - May 2023
Coursework : C, C++, Java, Data Structures, Computer Communication Networks

Work Experience

Machine Learning Intern September 2023 - June 2024
Celusion Technologies Pvt. Ltd. Mumbai

- Performed data pre-processing by handling imbalanced data, feature selection, and duplicate removal (500 entries), restructuring 1,000 records to enhance model training efficiency.
- Developed and optimized machine learning models, for customer behavior analysis and implementing Hyperparameter Tuning, Feature Engineering, and Loss Function Optimization, reducing model inference time by 30%.
- Leveraged Python, Pandas, NumPy, and Scikit-learn for data manipulation and collaborated in team discussions, leading to the implementation of innovative model enhancement ideas.

Cyber Security Intern January 2023 - July 2023
BSE Technologies Pvt. Ltd. Mumbai

- Configured and maintained SIEM systems, set up data sources, created and tuned rules, updated the system, and achieved a 95% system uptime through regular updates and maintenance activities.
- Investigated 50+ incidents, achieving an average resolution time of 4 hours per incident.
- Conducted regular security assessments, and developed and implemented 3 new security controls, enhancing overall security posture and compliance adherence.
- Collaborated on integrating SIEM QRadar with 2 new security technologies, improving threat detection and enhancing cross-team workflows for enhanced security response.

Projects

Transformer From Scratch - Link July 2023 - September 2023

- Implemented an LLM Transformer prototype from scratch using NumPy, building core components like multi-head self-attention, positional encoding, and feed-forward networks learning the mathematics behind it.

Retinal Fundus Disorder Detection - Link February 2024

- Developed an AI-powered deep learning model using MobileNetV3 and CLAHE preprocessing to classify 11 retinal disorders from fundus images with enhanced contrast and feature extraction.
- Optimized training with PyTorch, Adam optimizer, and data augmentation to improve generalization.
- Trained and deployed the model on Google Cloud TPUs/GPU.

ReadSmart November 2024

- Designed and implemented a Generative AI web app prototype leveraging Natural Language Processing (NLP) to create personalized reading comprehension passages and follow-up questions for children.
- Used OpenAI's GPT-4 for generating reading passages and comprehension questions dynamically, allowing fresh content each time.

Weakly Supervised Road Segmentation using Satellite Feed July 2023 - September 2023

- Developed an innovative Computer Vision system leveraging satellite feed for road region segmentation using weakly supervised learning techniques using TensorFlow.