SUSHMA MAREDDY

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EDUCATION

New York University, Courant — New York, NY
Master of Science, Computer Science — Expected May 2025
Coursework: Fundamental Algorithms, Database Systems, Computer Vision, Machine Learning, Operating Systems

MLR Institute of Technology — Hyderabad, India
Bachelor of Technology, Computer Science and Engineering — Jul 2021
Coursework: Algorithms, OOPS, Java, DBMS, Data Structures, Linux, Networks, Machine Learning, Compiler Design, Big Data, Cryptography

LANGUAGES AND SKILLS

Languages: Java, C++, C, Python, JavaScript, HTML, CSS, MySQL, Data Structures and Algorithms.
Frameworks and tools: Numpy, Pandas, Matlplotlib, seaborn, sci-kit learn, OpenCV, Tensorflow, Keras, Angular2, Spring MVC, Spring Boot, Hibernate, GitHub, VSCode, Jupyter Notebook, Eclipse, Postman.
Platforms: Windows, Unix, AWS, Snowflake.
Technologies: Machine Learning, Deep Learning, Generative AI, Natural Language Processing (NLP), Computer Vision, Java full-stack dev.

PROFESSIONAL EXPERIENCE

International Flavours and Fragrances — USA, Remote
Data Science Intern — May 2024 - Present
- Develop Generative AI models to automate processes, enhancing operational efficiency.
- Analyze results using AWS, Azure, and Snowflake for optimal cost savings.
- Present findings to senior management, contributing to strategic decision-making.
- Technologies: Generative AI, RAG, Large Language Models, AWS, Azure, Snowflake

Tata Consultancy Services, Apple Inc Client — Hyderabad, IN
Systems Engineer — Jul 2021 - Jun 2023
- Contributed to the IS&T team at Apple Inc., utilizing agile methodologies from requirements gathering to deployment.
- Designed and developed a real-time Data Services Platform, reducing API response time by 30%.
- Developed and maintained REST APIs and integrated Slack chatbot for test user creation.
- Owned login and other APIs for a facade application, ensuring smooth functionality and feature incorporation.
- Enhanced workforce management application features for Apple employees and Supported application changes across IT, UAT, and PROD environments, collaborating with stakeholders and scrum teams.
- Automated deployment processes, reducing deployment time by 40% using Git, Splunk, Rio, Fortress, Spinnaker, and AWS.
- Technologies - Java8, Spring, Springboot, REST API, MySQL, Angular, AWS, DevOps.

Freshworks — Chennai, IN
Software Engineer Intern — Mar 2021 - Jun 2021
- Developed a full-stack application called FreshReetro, used in scrum meetings to facilitate retrospective discussions by creating boards and cards for specified teams.
- Utilized Figma to design the application UI, ensuring a user-friendly and visually appealing interface that improved user engagement by 25%.
- Created REST APIs to manage board and card functionalities, enabling efficient data handling and reducing response time by 20%.
- Collaborated with cross-functional teams to gather requirements and feedback, resulting in the successful deployment of the application ahead of schedule by 10%.
- Technologies: Figma, Angular2, Spring boot, Rest API, MySQL.

Therex Technologies Pvt Ltd — Mumbai, IN
Machine Learning Intern — Jun 2020 - Aug 2020
- Conducted research on advanced Human-AI hybrid technologies: HITL (Human In The Loop) and CC (Cognitive Computing)
- Developed an AI system utilizing Convolutional Neural Networks (CNN) and a noise-reducer library to detect and mask noise in audio, resulting in a 45% reduction in background noise across various audio samples.
- Designed and implemented two interactive landing pages for company products which increased user engagement by 30%.
- Engineered the backend application infrastructure achieving a 40% improvement in data retrieval speed and system responsiveness.
- Technologies: CNN, Django, PostgreSQL, HTML, CSS, JavaScript.

AspireVision Tech Education Pvt Ltd — Hyderabad, IN
Java Intern — Jun 2019 - Jul 2019
- Developed an E-Library application, improving library management efficiency.
- Implemented servlets and JSP for dynamic web page generation, reducing load times by 15%.
  Technologies: Servlets, JSP, HTML, CSS, JavaScript, MySQL

ACADEMIC PROJECTS

AI medical diagnosis Application - Research Project publication link
- Our research attempts to develop an Arrhythmia classification using ECG Image analysis and will add other diagnoses later. Basically, ECG signals are used for the analysis of Arrhythmia.
- Here, a Convolutional Neural Network model is proposed for the classification of signals from ECG images to different classes.

Spacecraft Inspection through Advanced Object Detection
- Implemented advanced object detection models (ResNet, RCNN, Faster R-CNN, YOLOv8) for accurate identification of spacecraft in images.
- Achieved a high mean Average Precision (mAP) of 0.6 using YOLOv8 for spacecraft detection tasks.
- Developed and optimized pose estimation algorithms using ResNet and RNN (LSTM) models.
- Successfully estimated the relative pose of the chaser spacecraft camera with an accuracy of 0.72.

Enhancing Text Coherence with Mixture of Experts Model
- Developed a Mixture of Experts (MoE) model to enhance text coherence by dynamically selecting specialized expert networks, improving performance over traditional models like BERT.
- Implemented a gating network within the MoE model to select from multiple expert networks focusing on semantic similarity, contextual relevance, and syntactic coherence.
- Achieved significant performance improvements, with the MoE model reaching an accuracy of 0.73 and an F1 score of 0.72, compared to BERT's accuracy of 0.6 and F1 score of 0.53, using datasets like the Story Cloze Test.