NITHIL ESHWAR MANI

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EDUCATION

University at Buffalo   2025
Master of Science (Data Science)   CGPA: 3.67
Courses – Statistical Learning, Data Mining, Data Models Query language, Predictive Analysis, Analysis of Algorithms.

College of Engineering, Guindy (CEG)   2023
Bachelor of Engineering (Computer Science and Engineering)   CGPA: 3.23
Courses – Machine Learning, Data Structures, NLP, Big Data Analytics, Database Management Systems.

EXPERIENCE

Software Engineer Intern, **GreenInfo Tech -** Union City, CA   July 2025 - Present
- Worked on the **MedScribe AI** project, which focusses on automating paperwork by transcribing patient encounters, generating notes and filling medical forms. Used **GPT-4o** for building agentic systems
- Collaborated with the development team on a **Text-to-SQL agent** to provide SQL results to natural language queries. Used **Vanna AI** to train the model on **600+ patient records** and wrote **70+ one-shot SQL examples**. Improved performance on complex queries by **60%**.
- Assisted in developing an **AI Voice Agent** as part of a **5-person team** to automate patient intake, schedule appointments and verify insurance via phone calls. Used **FastAPI** for building **API**s and **ElevenLabs API** for **conversation handling**.
- Conducted **unit and integration testing** using **pytest**. Optimized backend code and improved performance by **20%**.

Software Engineer Intern, **Techavidity -** Frisco, Texas   June 2025 - Present
- Managed graph databases using **Neo4j,** and vector databases like **Milvus** and **Weaviate** to support real-world apps.
- Used **Neo4j ETL** tools generate metadata mappings and export data from PostgreSQL databases.
- Implemented graph algorithms and used **Neo4j Aura Graph Analytics** to gain deeper insights.
- Integrated AI models for intelligent relationship discovery and data-driven automation using **GraphRAGs**.
- Incorporated **Serverless applications** with simplified development and **reduced costs by 50%**.

Research Assistant, **University at Buffalo -** Buffalo, New York   February - May 2025
- Collaborated with a **4-member team** on the development and testing of **UnionLabs**, a shared online platform to share data, code, software and hardware resources for research in next-generation networks and wireless Internet of Things.
- Established **AWS EC2**-local server connectivity with API endpoints.
- Conducted thorough testing of **back-end**, **database**, and **APIs** to ensure robustness and reliability of the platform.
- The cloud-based remote-access solution enabled ease and efficiency while **reducing lab costs** by **60%**.
- Improved user **accessibility** and **responsiveness** by **70%** through optimized **React.js** front-end code.

PROJECTS

Question-and-Answer Agent for Research Papers - Langchain, Cypher, Streamlit
- Built a **Q+A agent** for Research papers using **GraphRAGs**, OpenAI's **GPT 4o model** and **Cypher**.
- Designed **prompts** to create knowledge graphs and wrote **data retrieval functions** using cypher.
- Deployed the application using **Streamlit**. The GraphRAG allowed for more comprehensive and detailed responses.

HEP-TH (High Energy Physics Theory) – Paper classification using Sci-BERT – Python, TensorFlow, SageMaker AI
- Classified over 30000 HEP-TH papers dating from 1991-2004 as influential and non-influential.
- Used **AWS SageMaker Blazing Text** for classification and **Sci-BERT** word embedding for tokenising.
- Performed hyperparameter optimization and obtained **75% accuracy**

Elastic Net Attack and Inception-ResNet V1 for Retinal OCT images – Python, Pytorch, SageMaker AI
- Optimized the **Inception-Resnet V1** model to detect Choroidal Neovascularization in over **10000 Retinal OCT images**.
- Obtained better accuracy (97.10%) compared to the **Amazon SageMaker Image Classification Model** (95.43%).
- Trained the model to overcome **Elastic-Net attack**. Improved the accuracy on adversarial examples from 7.5% to 51.39%.

TECHNICAL SKILLS

- **Programming and Querying**: Python, C, C++, R, Java, Go, Scala, JavaScript, React.js, Typescript, SQL, NoSQL, Cypher
- **Software Development and Containerization**: Amazon EKS, Amazon EC2, Git, Docker, Kubernetes
- **Analytics and Visualization**: Tableau, PowerBI, Google Analytics, Metabase, AWS Redshift
- **Databases and ETL tools**: MySQL, PostgreSQL, Neo4j, DuckDB, Milvus, Weaviate, AWS Glue, AWS Athena, Apache Spark
- **AI tools**: AWS SageMaker, AWS Bedrock, Langchain, BigQuery ML, Pytorch, Tensorflow, Vanna AI, ElevenLabs API
- **Certifications**: AWS Certified Machine Learning Engineer Associate, AWS Certified Data Engineer Associate
- **Programming Frameworks**: Pytorch, Tensorflow, Scikit-learn, Matplotlib, Streamlit