

# 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, Green Info 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.
- Collaborated with the development team on a **Text-to-SQL agent** to provide SQL results to natural language queries on **600+ patient records**. Used **Vanna AI** to train the model and wrote **70+ one-shot SQL examples**. Improved performance on complex queries by **60%**.
- Built an **AI Voice Agent** as part of a 5-member team to automate patient intake, schedule appointments and verify insurance information via phone calls. Used **FastAPI** and **ElevenLabs API** for building APIs and 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

- Contributed to 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

### 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**

### 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.

### 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, Apache Spark
- **Databases and ETL tools:** MySQL, PostgreSQL, Neo4j, AWS Glue, AWS Athena, DuckDB, MilvusDB, Weaviate
- **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