

# NITHIL ESHWAR MANI

716-292-5911 • nithiliisd@gmail.com • linkedin.com/in/nithil-eshwar • nithil3007.github.io/portfolio

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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, Deep Learning, NLP, Computer Vision, Big Data Analytics, Database Management Systems.

## EXPERIENCE

### Software Engineer Intern, Green Info Tech – Union City, CA

July 2025 - Present

- Collaborated with the development team to develop and test AI/ML-driven solutions for the **MedScribe AI** project, which focusses on automating paperwork by transcribing patient encounters, generating notes and filling medical forms.
- Developed and maintained cloud-native **data pipelines** on **AWS** and **GCP**, leveraging services for ingestion, transformation and secure storage.
- Implemented **CI/CD** pipelines and **Terraform** scripts for automated deployment and infrastructure management.
- Conducted **unit and integration testing**. Optimized backend data flows, improving pipeline efficiency by **20%**.

### Software Engineer Intern, Techavidity – Frisco, Texas

June 2025 - Present

- Built and managed graph databases using **Neo4j** and **MilvusDB** to support real-world, large-scale applications.
- Designed scalable **data pipelines** integrating **PostgreSQL** with Neo4j using **ETL tools** to generate metadata mappings and ensure efficient ingestion, transformation, storage and knowledge transfer across distributed environments.
- 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**.
- Enhanced data accessibility by designing **real-time data retrieval functions** with cypher queries.
- Optimized **ingestion** and **transformation** processes, cutting costs by 50% through **serverless pipelines**.

### 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

- Built an end-to-end **data pipeline** ingesting, transforming and classifying 30K + HEP-TH papers.
- Used **AWS SageMaker AI** for classification and hyperparameter optimization, **Sci-BERT** for word embedding.
- Applied data processing, tokenization and validation to ensure integrity. Obtained **75% accuracy** after cross validation.

### Question-and-Answer Agent for Research Papers - Langchain, Cypher

- Built a **Q+A agent** for Research papers using **GraphRAGs**, OpenAI's **GPT 4o model** and **Cypher** queries.
- Designed the UI 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**.
- Designed and validated models against adversarial attacks, **improving resilience** by **44%**.

## TECHNICAL SKILLS

- **Programming:** Python, SQL, Java, Scala, C++
- **Data Engineering:** ETL/ELT pipelines (dbt, AWS Glue), Airflow DAGs, Terraform, CI/CD
- **Software Development and Containerization:** Amazon EKS, Amazon EC2, Git, Anaconda, Docker, Kubernetes
- **Visualization:** Tableau, PowerBI, Google Analytics, Looker, Superset, Seaborn, Plotly, Matplotlib, Apache Spark
- **Cloud Platforms:** AWS (EKS, Athena, Redshift), Google Cloud Platform (Big query, Dataflow, Pub/Sub)
- **Data Modelling:** Snowflake schemas, Star schemas, normalization, graph data models
- **Databases:** Snowflake (Snowpipe, Clustering), MySQL, PostgreSQL, Neo4j
- **Certifications:** AWS Certified Machine Learning Engineer Associate, AWS Certified Data Engineer Associate