

# Gokulakannan Sakthivel

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## WORK EXPERIENCE

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**Graduate Research Assistant** | Institute for Physical Science and Technology, UMD, USA Oct 2025 - Ongoing

- Designing language models to interpret protein and RNA sequences for improved structural understanding and prediction.

**AI Engineer** | Centre for Responsible AI, IIT Madras, India

Apr 2025 - Aug 2025

- Engineered a multilingual evaluation pipeline for Indian conversational AI by integrating 15+ frameworks like RAGAS and Pheonix, designing modular metric strategies supporting 70+ culturally relevant safety and performance metrics, and developing Tamil, Gujarati, and Bengali datasets with infrastructure to evaluate bias, fairness, and cultural sensitivity.
- Presented research outcomes at the [2025 WSAI Annual Research Showcase](#) under the guidance of [Sudarsun Santhiappan](#) and [Balaraman Ravindran](#) and funded by Bill and Melinda Gates Foundation; contributed to hybrid deterministic and LLM-as-judge evaluation strategies, validated through extensive testing and real-world datasets.

**Applied Data Scientist** | ThirdAI Automations Inc, Remote, India

Jan 2025 - Mar 2025

- Architected and deployed RAG pipelines and ML-backed document processing solutions with FastAPI and LangChain, enabling contextual search and AI-driven recommendations.
- Designed and optimized end-to-end custom document processing pipelines by evaluating and applying the best-fit libraries for multiple file types, achieving superior text extraction and chunking for improved retrieval accuracy across data formats.
- Automated integration and scalable delivery of services as APIs via Docker, AWS, and CI/CD workflows, streamlining microservice development and ML productionization.

**Senior Machine Learning Engineer** | Eli Lilly and Company, Bengaluru, India

Jul 2022 - Jan 2025

- Promoted to **Senior Machine Learning Engineer (Nov 2024)**; worked on optimizing Azure-backed chatbot infrastructure in collaboration with **Microsoft** and business teams, addressing latency issues and improving content management features of internal website, and managed 2 RAG Applications built using AWS Services.
- Automated the infrastructure for seven critical projects, encompassing backend solutions on AWS and Azure and developed dashboards to monitor the services used for the project. Re-framed the architecture to ensure low-cost resource usage.
- Advanced to **Machine Learning Engineer-I (Mar 2024)** after building and maintaining RAG Architectures, custom built pipelines using Langchain, AWS and using LLMs like OpenAI and Claude, and indexing pipelines for a product used by over 100+ users, and supporting DevOps with Azure OpenAI integration, security, and automated workflows.
- Led a three-person team for GenAI hackathon, developing an RAG chatbot for internal knowledge base using GPT4All LLM and open source embedding model, earning runner-up. This major achievement led to the transition to **GenAI Team**.
- Began as an Azure Cloud Engineer, where responsibilities included automating Azure Bicep Templates for centralized deployments, Azure OpenAI Enablement and contributing to DevSecOps pipelines and cloud migration efforts.

## PROJECTS

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- **Song Mood Detection using Spotify Dataset** | Developed a data science pipeline for song mood classification using Spotify audio features from Kaggle, performing feature engineering, exploratory analysis, supervised modeling, and evaluation with standard classification metrics as part of MSML602 coursework.
- **AIEvaluationTool** | A comprehensive open-source Evaluation framework for holistic evaluation of conversational AI systems across safety, fairness, and performance metrics in Indian languages.

## TECHNICAL SKILLS

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**Programming & Scripting:** Python, C++, Powershell, YAML, MATLAB(Basics), Bash, TypeScript(Basics), JavaScript(Basics)

**Cloud Platform and Services:** AWS (Sagemaker, Bedrock, Lambda, DynamoDB, Fargate, Opensearch), Azure (AI Services, Logic Apps, Storage Accounts, CosmosDB, Cognitive Search), Google Cloud(Basics)

**Machine Learning & AI:** LangGraph, Langchain, TensorFlow, PyTorch, Scikit-Learn, NumPy, Pandas, SciPy, Natural Language Processing, Generative AI, Large Learning Models, RAG, Agents

**DevOps:** Docker, Git, Github Actions, CI/CD, AWS Cloudformation, Microsoft Azure Biceps

## CERTIFICATIONS & AWARDS

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Technica Hackathon: The First Light: Best Startup Track Hack ★ [Foundations of Generative AI](#) ★

[Generative AI with Large Language Models](#) ★ [Introduction to Large Language Models](#) ★ [Microsoft Azure Fundamentals](#) ★

[RISE Award by Lilly in \(Q1, Q2 and Q3\)](#) ★ [IBM Data Science Specialization](#) ★ [Google Cloud - Cloud Engineer Prep](#)

## EDUCATION

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**Master of Science in Applied Machine Learning** – University of Maryland CP | **GPA: 4/4 Sep'25 - Dec'26**

**Courses:** Probability and Statistics, Principles of Data Science, Principles of Machine Learning

**Bachelor of Technology in Chemical Engineering** – NIT Rourkela, India | **GPA: 8.17/10 Jun '18- Jun '22**

**Courses:** Mathematics I, II (ODEs, Matrix Theory, Vector & Differential Calculus), Basic programming in C