

DIMUTH KARUNARATHNA

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github.com/DimuthKarunarathna

📁 [Portfolio](#)

About

Software Engineer with strong focus on **Data Engineering, Data Science, and MLOps**. Experienced in building **end-to-end data pipelines, machine learning models, and cloud-based analytics solutions**. Skilled in **ETL/ELT workflows (Databricks, PySpark, Apache Airflow, Azure Data Factory, AWS Glue, dbt)**, **ML frameworks (TensorFlow, PyTorch, scikit-learn)**, and **cloud platforms (AWS, Azure, GCP)**. Proficient in deploying models using **Docker, Kubernetes, REST APIs**, and integrating workflows with **CI/CD**. Passionate about delivering scalable, production-ready **data-driven applications** that bridge the gap between **engineering, analytics, and machine learning**. Eager to continuously learn and adopt **emerging technologies and best practices** to drive innovation and growth.

Education

University of Westminster (IIT)

BEng (Hons) in Software Engineering

Jan. 2021 – Jul. 2025

Sri Lanka

Mahanama College

G.C.E Advanced Level

Jan. 2019 – Dec. 2020

Sri Lanka

NIBM

Certificate in Software Engineering

Jan. 2018 – Dec. 2019

Sri Lanka

Experience

IFS (Industrial & Financial Systems)

Undergraduate Trainee Software Engineer

Jul. 2023 – Jul. 2024

Colombo, Sri Lanka

- Resolved over 40 functional and technical issues in the IFS Cloud web client using Angular/TypeScript, contributing to improved system stability.
- Developed 15+ reusable Angular components, enhancing UI consistency and reducing front-end development time by an estimated 15%.
- Automated over 100 unit and E2E tests using Jest and Cypress, improving code coverage and reducing manual testing efforts.
- Participated in over 12 release validations, ensuring high-quality enterprise deliverables and contributing to successful product launches.
- Integrated automated testing into CI/CD pipeline, reducing regression bugs by 25% and accelerating the software release cycle.

Projects

Accident Anticipation System — YOLOv8, DeepSORT, Python

2025

Final Year Research Project

- Developed a system to predict vehicle collisions from dashcam feeds with 87% accuracy using YOLOv8 object tracking and regression analysis.
- Implemented real-time airbag activation simulation using spatio-temporal features (speed, distance, angle, braking, jerk).

Airflow Stock ETL Pipeline — Apache Airflow, Docker, Postgres, yfinance

2024

Independent Project

- Developed an Airflow DAG to fetch, clean, and load stock data into Postgres on a schedule.
- Enabled database management via pgAdmin and automated daily runs with 100% reliability.

Financial Sentiment Pipeline — Snowflake, FinBERT, VADER, Python

2024

Independent Project

- Designed an ETL pipeline integrating stock prices, financial news sentiment, and Snowflake analytics.
- Built SQL views and Power BI/Tableau dashboards to correlate sentiment with stock performance.

Stock Analysis Dashboard — Power BI, Python, Yahoo Finance API

2024

Independent Project

- Automated stock data extraction using Python scripts and Yahoo Finance API.
- Created Power BI dashboards to visualize trends, volatility, and stock performance.

Credit Risk Prediction Model — *Python, Scikit-learn, Gradient Boosting* 2024

Independent Project

- Built a machine learning pipeline on German Credit Dataset achieving 97.5% accuracy using Gradient Boosting.
- Implemented model persistence, REST API integration, and Docker deployment for scalable use.

Resume Screening System — *Python, Streamlit, NLP* 2024

Mini Project

- Built a PDF-based classifier using Naive Bayes and TF-IDF to categorize resumes by job roles, improving recruitment efficiency.
- Created a Streamlit UI enabling real-time resume upload and inference for end users.

DebateBot – Multi-Agent AI Debate System — *Gemini API, Python, Streamlit* 2024

Independent Project

- Utilized Gemini APIs to simulate real-time debates between bots on user-defined topics.
- Enabled configurable debate rounds, transcript export, and dynamic multi-turn conversations.

Technical Skills

Languages: Python, SQL/MySQL, Java, JavaScript, TypeScript, C#, Dart

Analytics & BI: Power BI, Tableau, Excel

Data Engineering & ETL: Databricks, PySpark, Apache Airflow, Azure Data Factory, AWS Glue, dbt, Postgres

ML/AI Frameworks: TensorFlow, PyTorch, scikit-learn, YOLOv8, DeepSORT, FinBERT, VADER, LangChain, Semantic Kernel, CrewAI, AutoGen

Generative AI: Basic knowledge of LLMs and applications; familiarity with Hugging Face and prompt engineering

Cloud Platforms: AWS, Azure, GCP

Databases: Snowflake, Oracle, MySQL

DevOps & APIs: Docker, Kubernetes, Git, Bitbucket, SVN, JIRA, Swagger, Streamlit, REST APIs, OpenAI/Gemini APIs, n8n, Zapier, Copilot Studio, OAuth2, Message Queues

Frontend: Angular, Flutter, HTML5, CSS3

Testing: Jest, Cypress, Unit Testing, Automated Release Validation

Soft Skills: Problem-solving, attention to detail, strong communication, teamwork, Agile/Scrum, Low-Code Development, Workflow Automation

Publications

- **PreCollision Detection and Context Aware Airbag Deployment YOLOv8-DeepSORT and XGBoost – ICEST 2025**
- **Driving Safety Innovation: ML-Powered Airbag Systems – 8th IRCSCSE**

Leadership & Volunteering

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| Mozilla Campus Club of IIT | Jan. 2021 – Present |
| <i>Volunteer</i> | <i>Sri Lanka</i> |

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| Rotaract Club of IIT | Jan. 2021 – Present |
| <i>Volunteer</i> | <i>Sri Lanka</i> |

References

Mr. Sanka Basnayake

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Mr. Senaka Ekanayake

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