



GI of AI

Global Institute of
Artificial Intelligence



EXECUTIVE PROGRAM IN DATA ENGINEERING™

Master Cloud-Native Data Engineering
and Build Enterprise-Grade Pipelines.

 1800 434 008

www.giofai.com 

Overview

The Executive Program in Data Engineering is a 12-week intensive, project-driven course designed to elevate skilled professionals from foundational understanding to deploying scalable, production-grade data platforms. Developed by industry experts and academic leaders at GlofAI (Global Institute of Artificial Intelligence), this program builds directly on the Professional Certificate in Data Engineering and focuses on cloud integration, automation, orchestration, and real-time processing. Through real-world projects, mentorship, and advanced labs, you'll gain the expertise to design, build, and manage data pipelines that meet enterprise-grade performance, security, and governance standards.

Outcome

Senior Data Engineer

Delivery Mode

Hybrid
(Recorded + Live Labs)

Cohort

20 - 25

Duration

12 Weeks
8-10 Hours per Week

Why Experienced migrants struggle - and how we solve it

No Local Experience" Barrier

Our solution

- GlofAI offers production-level projects and ACS-aligned documentation built to Australian standards, enabling migrants to showcase credible, locally-recognized experience.

Qualification and Skills Gaps

Our solution

- Participants gain mastery in industry-leading platforms (AWS, Azure, Snowflake, Airflow, Databricks) through a curriculum and portfolio aligned with Australian requirements, making overseas qualifications relevant and visible.



Problem & Solutions

No Genuine Australian Networks

Our solution

- Direct networking events and employer connections empower migrants to develop referrals and a professional network vital for career progression in Australia.

No Career-Ready Profiles and Pathways

Our solution

- GlofAI helps learners create ATS-aligned résumés and LinkedIn profiles, plus targeted career coaching to address profile gaps, employer expectations, and pathways effectively.



Build the Core Skills, Portfolio & Confidence to Enter Data Engineering

Live interactive sessions

Interactive sessions with industry experts covering core concepts and real-world applications.

Hands-On Labs

Practical exercises using real datasets and industry-standard tools.

Portfolio Projects

Build board-ready artefacts: strategy decks, business cases, risk registers

24/7 Mentor Support

Get help whenever you need it from experienced data engineers.



Curriculum Structure

Each week combines theory, guided labs, and a production-style project.

Week 1 - 6 : Professional Certificate in Data Engineering

▶ **Summary :**

Understand data-engineering roles, pipelines, and data lifecycles. - Learn basic SQL for querying structured data.

▶ **Topics:**

- Data Engineering Foundations & SQL Basics , Advanced SQL & Relational Modeling , Python for Data Engineering , Apache Spark Basics , Real-Time Data & Cloud Infrastructure (Introduction) , SQL on Databricks (Community Edition) & Capstone Project

Week 7-8 : Distributed Data Processing Fundamentals – Apache Spark

▶ **Summary :**

Introduction to Distributed Data Processing · ·

▶ **Topics:**

Introduction to Distributed Data Processing , Hadoop Ecosystem Overview , Apache Spark Fundamentals , Spark Low-Level API, RDD , Actions & Transformations , DAG , Real-world example: Processing Unstructured Data using PySpark , Apache Spark High-Level API , DataFrame , Spark SQL , Programming with DataFrames (Transformations) , Spark Optimization , In-Memory Optimization , Partitioning , Bucketing , Caching , Code-Level Optimization , Performance Tuning , Execution Plans, File Formats, Resource-Level Optimization

Curriculum Structure

Each week combines theory, guided labs, and a production-style project.

Week 9–10: Azure Databricks Fundamentals

► Topics:

- Introduction to Cloud Computing , Microsoft Azure Overview, Azure Cloud Service Models (IaaS / PaaS / SaaS) , Azure Monitoring & Management Tools , Azure Core Services, Azure Storage Services , Apache Spark vs Databricks , Azure Databricks Architecture , Core Features of Databricks , Databricks Cluster, DBFS (Databricks File System), Databricks Notebooks , Databricks Utilities (fs, notebook, widgets), Databricks CLI , Mounting Azure Storage to DBFS , Accessing Azure Storage Account , Case Study:, Azure Storage Setup , Databricks Setup, Parameterized Spark App using Widgets

Week 11: Azure Databricks – Delta Lake

► Topics:

- What is a Data Lake , Delta Lake Introduction , Practical Delta Table Operations , Delta Lake Architecture , Azure Lakehouse Architecture , Delta Engine , Optimization Techniques , Azure Databricks Unity Catalog , Databricks Workflows , Case Study: End-to-End Data Pipeline with Spark SQL

Week 12: Spark Streaming & Kafka Integration+Capstone Project

► Topics:

- Pub-Sub Model , Real-Time Data Concepts , Kafka Introduction, Kafka Architecture & Components , Confluent Kafka , Producer & Consumer API , Spark Streaming , Real-Time Data Streaming Project

End-to-End Pipeline

Apply all Databricks concepts (Spark, Delta Lake, SQL, Workflows, Storage). - Build a complete production-grade data engineering pipeline.



Deliverables

- ETL notebooks (Bronze → Silver → Gold) - Delta tables with optimized storage
- Dashboard-ready Gold tables for reporting
- Workflow orchestration setup (scheduled pipeline)
- Documentation & architecture diagram



Showcase

- Ingest raw files (CSV/JSON/Parquet) into Bronze layer. - Clean & transform data using PySpark into Silver layer. - Create business-level aggregations using Spark SQL into Gold layer. - Use Delta Lake features: ACID, Time Travel, OPTIMIZE, ZORDER. - Implement Unity Catalog for governance. - Orchestrate pipeline using Databricks Workflows.

Portfolio Outcomes



GitHub repository containing complete codebases for weekly labs and enterprise-grade capstone.



Two mini-projects + one major enterprise capstone, covering ingestion, transformation, validation, CI/CD, and cloud deployment.



Batch + streaming pipelines, fully integrated (API/S3/Kafka → Spark/DBT/Airflow → Lakehouse/DW).



Architecture diagrams, workflow designs, data lineage, and observability dashboards.



CI/CD automation setup using GitHub Actions/Jenkins/Terraform.



Data quality and governance artifacts, including Great Expectations validation suites and metadata policies.



Program Support & Career Services



6 × 1-on-1 mentorship with GlofAI-certified mentors(capped for \$350)



Resume, LinkedIn, and portfolio workshops; two mock interviews



Weekly code review with line-by-line feedback



Industry guest lecture with Australian employer insights



Weekly office hours while in program



Monthly Career follow ups (Group)



Why Choose GlofAI ?

- ▶ **Why Choose This Program:** Designed with input from enterprise data leaders.
- ▶ **Real-World Projects:** Hands-on experience aligned with business use cases.
- ▶ **Mentorship Access:** 1:1 sessions with data architects and mentors.
- ▶ **Certification-Ready:** Aligned to Azure DP-203, Databricks, AWS certifications
- ▶ **Career Mobility:** Bridge from mid-level engineering to architecture.

Continue Your Growth

After Week 12, upgrade to :

- **Advanced Program** — (24 weeks) — upgrade to accelerate toward Architect.
- **Leadership Program** — (1 year) — upgrade to accelerate toward Head of Data

GlofAI Executive Certificate



CERTIFICATE

- Shareable digital badge (Open Badge standard)
- One-click verification for recruiters and hiring managers
- Certificate ID & QR for resumes and portfolios
- Aligned to Australian data engineering job competencies



Mentors and Faculty



Led by GlofAI's global faculty, including senior data engineers, architects, and strategy professionals from AWS, Microsoft, Databricks, and major Australian enterprises.



“This program transforms engineers into architects — helping them move from running pipelines to designing scalable, intelligent data ecosystems.”

Sandeep Bhalekar

CEO & Technical Director, GlofAI



Phone Number:
1800 434 008



Website:
www.giofai.com



Email Address:
info@giofai.com.au



Location
Level 7/276 Flinders St,
Melbourne VIC 3000

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