

# KARTIKEY PANDEY

## Data Engineering & Financial Systems Architect

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### SUMMARY

Systems-oriented Data Engineer with deep expertise in architecting high-velocity financial data backbones. Specialized in decoupling legacy monolithic pipelines into scalable, modular architectures. Proven track record of reducing compute costs by 75% and operationalizing governance frameworks for Tier-1 banks. Expert in transforming unstructured data swamps into governed, regulatory-grade assets using Python, SQL, and AWS/GCP.

### SKILLS

**Orchestration & Compute:** Dagster, Airflow, Docker, Kubernetes, Unix/Shell.

**Data Persistence:** PostgreSQL, DB2, AWS S3, GCP Cloud Storage.

**Language & Stack:** Python, SQL (T-SQL, PL/pgSQL), Terraform.

**DevOps & Governance:** CI/CD, AWS SES, PagerDuty, Data Validation Frameworks.

### PROFESSIONAL EXPERIENCE

#### CAPCO TECHNOLOGIES

Bangalore, India — March 2022 – Current

##### European Bank — Microsoft Power Platform Developer — Data Engineer (ESG) Feb 2025 – Current

- **Core Focus:** Architecting Scalable Governance & Risk Data Platforms.
- **Engineering High-Velocity Risk Systems:** Designed and deployed a critical Risk Analysis Tool using VBA/Python in under one week to meet urgent regulatory deadlines. This real-time delivery resolved critical blockers and was formally acknowledged by the Client Director.
- **75% Performance Optimization:** Re-architected legacy Python scripts for the European Bank project, reducing execution runtime from 40 minutes to 10 minutes (75% reduction) while maintaining 100% data accuracy.
- **Building the Data Grid:** Architected a scalable Python solution for emissions analysis across different sectors. This solution was featured in Capco's ESG Newsletter for its operational efficiency.
- **Data Governance Architecture:** Developed a "Cellular Level" Data Governance & Management Tool using Power Apps. This system allows users to update, lock, and attest specific data points without compromising the integrity of the master global dataset.
- **Production Gap Remediation:** Audited client delivery workflows to identify critical production gaps, redesigning the data process flow to ensure compliance and delivery stability.

#### US Investment Bank — Integration & Data Engineering

Feb 2023 – Jan 2025

- **Enterprise ETL Grid Architecture:** Designed and operationalized the bank's central data integration framework, handling the end-to-end lifecycle for mission-critical financial datasets.
- **Scale & Orchestration:** Built and deployed 60+ automated integration pipelines, ingesting complex data streams (APIs, CSV, Excel, JSON) on rigorous daily and quarterly schedules to feed downstream risk models.
- **50% Performance Optimisation:** Engineered a specialised "Reporting Layer" within the database architecture, which reduced query latency and improved overall system throughput by 50%.
- **Modular Engineering:** Developed a suite of reusable Python libraries and custom modules, creating a standardized code foundation that accelerated delivery speed for cross-functional teams.
- **Tech Stack:** Python (Pandas/NumPy), PostgreSQL, GCP, Airflow, Docker, Unix, Git, CI/CD Pipelines.

## **European Bank — Python Developer**

*March 2022 – Jan 2023*

- Delivered critical Python-based automation for ETL pipelines, significantly improving processing speed and system reliability.
- Created and tested Dockerized environments for API endpoint management, enhancing the team's ability to quickly deploy, test, and maintain integrations.
- Automated AWS SES for error logging, with custom email templates designed using Jinja, improving communication of system alerts and error reporting.
- Collaborated with the DevOps team to build and maintain CI/CD pipelines using GitHub and GitLab, ensuring smoother deployments and reduced downtime.

## **EDUCATION**

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**Liverpool John Moores University, London**

*2022*

M.Sc. Data Science

**IIIT Bangalore**

*2020 - 2021*

PG Diploma in Data Science

## **RECOGNITION**

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- Recognized by Capco leadership for outstanding contribution to ESG data platform delivery.
- Awarded for high-impact performance in improving ETL pipeline efficiency and delivery timelines.