matrixc ACADEMY



Enterprise Data Innovator

Lead the Future with Data-Driven Innovation

LEARNING PATH OVERVIEW

The Enterprise Data Innovator learning path covers data warehousing and pipelines, SQL data preparation, AI and machine learning, data storytelling and dashboard development. Participants practise preparing, analysing and communicating business data with BigQuery and predictive modelling tools.

LEARNING PATH OBJECTIVE

- Master data management for effective analysis and decision-making.
- Create compelling data stories to communicate insights clearly.
- Build impactful visualizations to simplify complex information.

RECOMMENDED FOR

professionals who want to master data management, storytelling, and visualization to drive better decision-making.

COURSES

Data Pioneer
Understand data lakes vs. warehouses and build pipelines with BigQuery.

Data Alchemy
Use SQL to clean and transform big data for insights.

Data Innovator
Master AI and machine learning for predictive modeling.

Data Storytelling
Create compelling data stories with effective visuals.

Data Visualization
Build dashboards and reports for clear data insights.

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Course Outline

Unlocking Data Goldmines: Mastering the Art of Modern Data Warehousing

1

Introduction to Data Warehousing

Discover the vital role data warehousing plays in modern businesses by understanding its definition, significance, and how it helps overcome organizational data silos. Explore the key objectives and benefits that effective data warehousing brings to your enterprise.

2

Data Lakes vs. Data Warehouses

Learn the fundamental differences between data lakes and data warehouses, along with their unique use cases. Understand how integrating these two approaches can enhance enterprise-level data management and drive better decision-making.

3

Components of Data Pipelines and Processing

Delve into the essential components of data pipelines, focusing on Extraction, Transformation, and Loading (ETL). Explore various data processing techniques, including both batch and real-time processing, to streamline your data operations.

4

Excel vs. Modern Data Warehouses

Evaluate the limitations of Excel for data analytics and reporting, and discover the advantages of using modern data warehouses like BigQuery. Compare features, scalability, and performance to see how BigQuery outperforms traditional spreadsheet tools.

5

Hands-On Workshop: ELT with Excel and BigQuery

Engage with a real-world large dataset in a practical session where you'll perform an Extract, Load, Transform (ELT) process using Excel. Follow up with a guided demonstration of the same process using Google BigQuery, gaining hands-on experience with both tools.

Course Outline

Data Alchemy - Transforming Big Data into Actionable Insights

1

Tidy Data Principles

Learn the importance of tidy data in analysis, focusing on organizing variables, observations, and values. Gain practical techniques to clean and structure messy datasets for easier manipulation and visualization.

2

Normalization vs. Denormalization

Understand the differences between normalized and denormalized data tables, including their pros and cons. Discover real-world applications to determine when each structure is most effective.

3

SQL Basics for Data Analytics

Get introduced to SQL and its role in data analysis. Learn essential commands like SELECT, WHERE, and JOIN to query, aggregate, and analyze data from multiple tables.

4

Hands-On Workshop: Tidying and Querying Big Data with BigQuery SQL

Apply your skills in a practical workshop using BigQuery SQL. Work with a large dataset to tidy, query, and transform data, extracting actionable insights for real-world scenarios.

Course Outline

From Data to Decisions: AI and Machine Learning (2-Day Course)

1

Introduction to Statistical Thinking

Gain a solid foundation in statistical principles to effectively analyze and interpret data, setting the stage for predictive modeling and informed decision-making.

2

Introduction to Predictive Models

Explore predictive modeling, including supervised and unsupervised learning, regression, and real-world applications, to forecast trends and drive strategic decisions.

3

Exploratory Data Analysis (EDA)

Learn the importance of EDA in data preparation, with techniques for visualization, summary statistics, and data preprocessing to ensure data readiness.

4

Model Building and Evaluation

Build predictive models using basic machine learning algorithms, and learn to evaluate them with metrics like accuracy and precision, ensuring they generalize well.

5

Improving Model Performance

Enhance model accuracy through feature engineering and hyperparameter tuning, while addressing common challenges like overfitting and underfitting.

6

Hands-On Workshop: Building and Evaluating a Model with Vertex AI

Apply your skills in a practical workshop using Google Cloud's Vertex AI to build and evaluate a machine learning model from data preparation to evaluation.

Course Outline

Persuasive Data Storytelling - Crafting Compelling Narratives with Data-Driven Insights

1

Those who tell good stories, rule the world

- What is Data Storytelling?
- Examples of good storytelling
- Bad storytelling
- Examples of bad storytelling
- 3 purposes of Data Storytelling

2

Data Storytelling - 3 steps to success

This section outlines important aspects such as defining the audience, crafting impactful titles, and integrating data effectively into the story.

3

Audience: The Who

- Defining the who as the starting point
- The who determines the what & the how
- Identifying audience from a cultural perspective

4

Story: The What

- 6 most popular Data Story
- Oyster vs Pearl - Show them the pearl
- Hybrid title - how to write impactful title that drives actions

5

Story: The How

- Data is the backbone of our story
- The BET test - Bias, Enough & True and Fair View

6

Defining the one big idea

- Combining the who, the what and the how
- Storyboarding

7

Group exercise using real datasets

Course Outline

Persuasive Data Storytelling - Crafting Compelling Narratives with Data-Driven Insights

8

Graphical Perception

- Why some visuals are better than others
- Choosing the right visual
  - What is your Data Type?
  - Different type of visual for different type of data types

9

Charts Makeover

- Data to Ink Ratio - why it's important
- Focusing on what's important

10

Color Psychology

- Psychology of colors
- Using colors purposely
- Cheat code : how to apply the best color scheme

11

Font Psychology

- Psychology of font
- Using font purposely
- Font pairing and sizing

Course Outline

Impactful Insights: Crafting Data Driven Dashboards and Reports

1

Basics of Data Storytelling

Understand the importance of data storytelling to enhance the effectiveness of visualisations. Leverage the principles of data storytelling, combining narrative, data and visuals to convey insights.

2

Introduction to Visualisation Tools

Understand the basics of popular data visualization tools such as Looker Studio. Master the interface and components of these tools for immediate use in your daily reporting.

3

Building Interactive Dashboards

Master visual design principles for creating impactful and user-friendly dashboards. Understand when and how to use different visualization components (e.g., charts, filters) for different data types, in addition to tips & ticks for effective visual design.

4

Hands-On Workshop: Constructing a Live Dashboard

Get hands-on in a practical session where you create a simple and meaningful dashboard. The workshop includes tasks such as planning a dashboard, connecting to a dataset, and building beautiful visualizations.

Trainers Profile

Mazlita Mat Hassan Director / Lead Trainer, MatrixC Academy



Mazlita Mat Hassan, known as "MEM," is an accomplished IT corporate trainer and data science expert with a BSc in Computer Science from University College London. With over a decade of experience, she has trained more than 10,000 professionals across Southeast Asia, specializing in Microsoft Office, Google Apps, and Tableau.

As the CEO of RECQA, she drives DeLIMA 2.0, Malaysia's National Digital Learning Platform, and leads MatrixC Academy's Change Management training with Google Tools. Globally recognized, she is the SEA & Pacific Leader for UNCTAD's "e-trade for women" initiative and received the 2023 Women in STEM award from Business and Professional Woman Malaysia for her contribution in co-developing DeLIMA 2.0 with MOE and Google Malaysia.

Ikmal Nordin Data & AI Lead, Matrix Connexion



A distinguished data analytics trainer, data scientist, and AI specialist with deep expertise in data science, AI, and economic analysis. Renowned for architecting cutting-edge data solutions, he translates complex concepts into practical, high-impact training for both corporate teams and individuals.

Ikmal has successfully trained and consulted for leading companies like Proton, Star Media Group, and BE International, empowering professionals across industries to harness the power of big data and AI for significant productivity gains and career advancement.