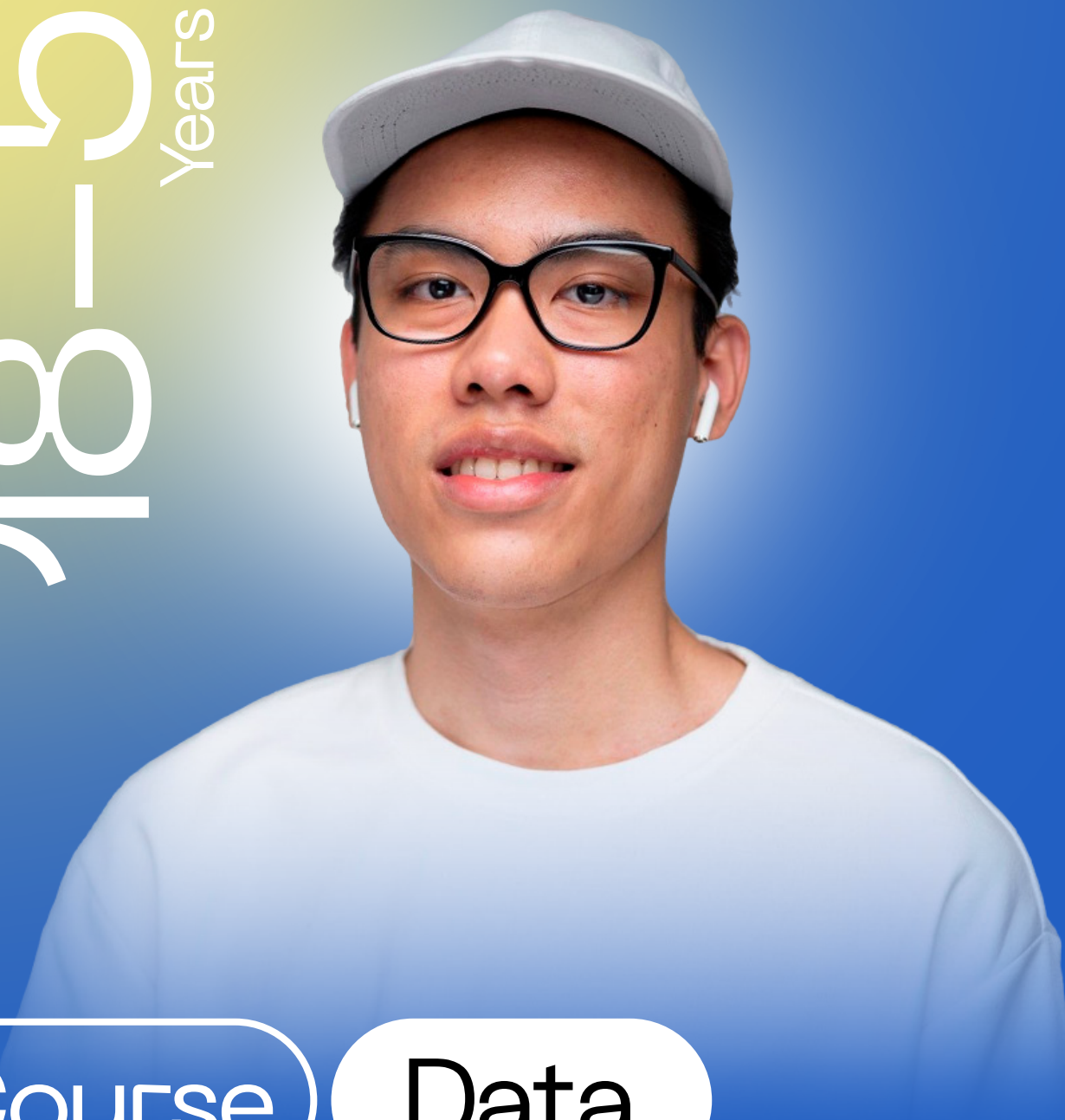


Students

18-55  
Years old



Course

Data

Science

238 academic  
hours

9 months of study  
duration

# DATA SCIENCE COURSE PROGRAM

## Python

- Using Jupyter Notebook.
- Variables and Data Types.
- Loops.
- Advanced Work with Various Data Types (lists, strings, dictionaries).
- Functions.
- File Handling.
- Object-Oriented Programming (OOP).
- Introduction to Algorithms.
- Unittest.

## Python Libraries, Basics of Statistics, Linear Algebra, Mathematical Analysis, Probability Theory

- **Basic Math Sections are studied not as dry theory but using Python packages:**
- **NumPy** — Linear algebra. Creating and performing operations on vectors and matrices, systems of linear equations and their solutions, matrix decompositions.
- **Pandas** — Extracting, creating, and transforming data tables. The most significant package for working with statistics.
- **Matplotlib** — Data visualization.
- **Descriptive Statistics:**
  - Parameters characterizing variability.
  - Types of distributions.
  - Confidence intervals.
  - Parametric and nonparametric tests.
  - Correlation and types of correlation.
- **Mathematical Analysis:**
  - Graphs and functions.
  - Limits and derivatives.
  - Problems of finding extrema.
  - Integration.

- Gradient.
- Probability Theory: Basic definitions. Properties of probability. Conditional probability.
- Bayes' theorem. Combinatorics.

## SQL

- Basic syntax.
- Table joins.
- **Advanced SQL features:**
  - Window functions, ranking functions, and offset functions.
- Introduction to PostgreSQL.

## Git and GitHub

- Version control and collaborative coding.

## Foundations of Machine Learning

- Key stages of model development.
- Exploratory data analysis (EDA).
- Primary classification of machine learning algorithms.
- **Feature transformation techniques:**
  - Feature scaling.
  - Encoding of categorical features.

## Machine Learning Algorithms

- **Linear Algorithms:**
  - Linear regression, regression quality metrics, linear classifier, and logistic regression.
- **Decision Trees:**
  - Decision trees, information criteria, ensembles of trees, bootstrapping, and random forests.
- **Metric Algorithms:**
  - k-Nearest Neighbors (k-NN) and associated metrics.
- **Clustering:**
  - Quality metrics, k-means, hierarchical clustering, DBSCAN, and Principal Component Analysis (PCA).

## Data Extraction

- **Extracting data from websites:**
  - Using **Scrapy**, **BeautifulSoup**, and **Requests** (sending HTTP requests, parsing HTML, and extracting data).
- **Working with files:**
  - **CSV/Excel**, PDF files, and extracting data from images using **Pillow** and **OpenCV**.

## Deep Learning

- Key differences between Deep Learning (DL) and Machine Learning (ML).
- **Neural Networks:**
  - Core theory, including layers, weights, biases, activation functions, and loss functions.
  - Implementation using Python's **PyTorch** library/framework.
- **Practical examples:**
  - Applications in **Computer Vision** and **Natural Language Processing (NLP)**.

## Docker

- Deploying models with Docker.

# What Data Scientists Do

- Analyze large datasets, build models, and use machine learning to make predictions and identify patterns.
- Play a key role in industries that require data storage and processing.

## What You Will Learn in This Course

- **Model Building:** Collect, clean, and transform datasets using Python.
- **Drawing Conclusions and Hypotheses:** Perform exploratory and statistical analyses of big data.
- **Machine Learning Applications:** Predict events, forecast values, and uncover hidden patterns in data.
- **Visualization:** Build and analyze histograms and other graphs to identify patterns and anomalies.

This program is designed to equip you with all the essential skills to succeed as a Data

Scientist across various industries.



# 23

years on the market

# 200+

branches

# 4,8

average rating

# 2 800

lectures

# 72 000+

students

## **Philippines:**

11th Drive, corner 9th Ave, unit 1214, Taguig, NCR  
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## **Malaysia:**

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5515737748

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22 1572 8200

## **Republic of South Africa:**

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+27 78 769 4819  
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0232 335 15 74

İstanbul, Osmanaga district Suleymanpasa  
street, building: 2-4, floor: 5 Kadıkoy-Istanbul  
+902167069793

Antalya, Muratpaşa district, Kışla neighborhood,  
45. Street, Building number: 20 Door number:  
101-102  
02422550269

Mersin, Mezitli, Atatürk district.  
31087 street. 2/A  
03245033001

Bursa, Fethiye neighbourhood, Alev(240) Street,  
Corner Plus business center site Corner Plaza  
no: 10 inner door 70 Nilüfer  
02243220704

\*data is valid  
as of the beginning of 2025