Data Analysis in Python (code: LC-PYTHON-ANALYSIS)

Overview

The ability to find and analyse phenomena in large data sets is a must in today's world. Efficient data processing allows you to make effective and competitive decisions – and this guarantees success in business.

Not every company is able to use the potential hidden in data. In order to analyse large amounts of, often incomplete information, you need statistical methods and knowledge of the relevant technologies. You will gain these skills on our course!

Python is one of the most popular languages for data analysis thanks to its wide background of tools.

Pandas , **NumPy** , **matplotlib** and other popular packages represent a mature ecosystem of ready-to-use modules, and the versatility of Python allows, apart from data analysis, to extract, process and export data both as reports and as input files for other applications.

On our course, participants can broaden their knowledge on issues related to data analysis, as well as learn about the most popular tools used for this purpose.

This course covers topics related to data analysis using Python, as well as using any skills acquired during the course to train models used in machine learning.

Ask for details

Phone +44 203 608 6289
info@alx.academy

Coming courses

2026-11-21 (Online (English))

Duration

80h

Agenda

1. **Introduction to programming in Python**
   - Genesis and history of Python
   - Applications and possibilities
2. **Installation and configuration of the environment**
   - Python interpreter
   - Virtual environment (venv)
   - Integrated development environment (IDE)
3. **Basics of Python syntax**
   - Interaction with the user
   - Variables and basic data types
   - Data structures
   - Conditional statements
   - Loops
   - Comprehension expressions
4. **Procedural programming**
   - Basics of defining functions
   - Passing arguments
   - Date and time handling (`datetime` module)
5. **Analyst's work environment**
   - Anaconda
     - Conda package manager
     - pip manager
     - Creating a virtual environment
   - Jupyter notebook
     - Markdown

- Elements of Latex notation

6. **Data processing**
   - Introduction to NumPy
     - Creating vectors and matrices
     - Transformations, operations in NumPy
     - * Selection
     - * Vectorization
     - * Broadcasting
     - Arithmetic and algebra using NumPy
     - * Solving linear equations
   - Introduction to Pandas
     - Data series and frames
     - Obtaining data from various sources
     - * Files
     - * Resources on the Internet
     - * Databases
   - Data Preparation and Cleansing – DataFrame Operations and Transformations
     - Deleting columns and rows
     - Changing dimensions – reshaping
     - Pivoting
     - Ranking and sorting data
     - Combining frames (concatenate, merge, join)
7. **Data analysis**
   - Visualizations
     - Introduction to matplotlib
   - Generating charts from pandas
   - Seaborn and other data visualization tools in Python
   - Basics of statistical analysis
   - Statistical inference
8. **Introduction to machine learning**
9. **Review of machine learning methods and algorithms**
   - Machine learning methods
     - Supervised learning
     - Unsupervised learning
10. **Machine learning process**
    - Data mining
    - How to choose the best model for the task
    - Data preparation
      - Training set
      - Test set
    - Model training
    - Model validation
    - Model overfitting
    - Data dimensionality reduction techniques
11. **Overview of machine learning methods**
    - Regression
      - Linear Regression
      - Polynomial regression
      - Logistic regression
    - Classification
    - Data grouping
    - Dimension reduction
    - Artificial Neural Networks

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12. **Combining classifiers**
13. **Visualizing results**

Target audience and prerequisites

A course for people who know the basics of Python, who want to broaden their knowledge about issues related to data analysis, as well as learn the tools used for this purpose.

There are no requirements, this is a course from scratch. However, basic knowledge of Python will be an additional asset.

Certificates

Course participants receive completion certificates signed by ALX.

Locations

— Warsaw (English) – Jasna 14/16A
— Online (English) – your home, office or wherever you want
— any other location (London, UK, EU) on request

Price

1290 EUR

The price includes:

— course materials,
— snacks, coffee, tea and soft drinks,
— course completion certificate,
— one-time consultation with the instructor after course completion.

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