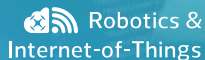


PYTHON DATA SCIENCE SPECIALIZATION

*Designed by Prof. Anis Koubaa,
Executive Director of the Innovation Center
Director of the Research & Initiatives Center
Leader of the Robotics & Internet-of-Things Lab*

ORGANIZED BY



OVERVIEW

The Python Data Science Specialization program opens new horizons to learners for cutting-edge and highly demanded scientific computing skills required in engineering, computer science, economics, business analytics, research and development, industrial applications, cyber security, and other fields.

We designed this specialization to provide a comprehensive introduction for either beginners with essential programming background or more advanced developers who would like to step into the world of data science, scientific computing, and analytics using Python.

During the specialization, our instructors will present all the essential material to access, store, manipulate, visualize, process and analyze data using Python.

At the end of this program, you will have the required skills to go deeper into more technical data science areas and the necessary background to study hot topics like deep learning, neural networks, and data analytics.

Enrolling in this specialization will enable you to earn your Professional Certification in Data Science! You will be eligible to access numerous career opportunities after successfully completing this specialization.

INSTRUCTOR BIOGRAPHY

Anis Koubaa is the Executive Director of the Innovation Center, the Director of the Research and Initiatives Center, and the leader and founder of the Robotics and Internet-of-Things Lab at Prince Sultan University.

He is a Full Professor in Computer Science and has worked on several R&D projects on Data Science and Unmanned Aerial Systems, Deep Learning, Robotics, and Internet-of-Things. He is a Senior Fellow of the Higher Education Academy of the UK.

Anis Koubaa received the AI Leadership Award in 2022 at the Saudi International AI and Cloud International Expo. He was shortlisted in the Leadership and Management Team of the Year in Times Higher Education Awards Asia 2022, received the Rector's Best Teacher Award in 2016 at Prince Sultan University as well as the Best Research Award in 2012 at Al-Imam University. He is also nominated in the career-based top 2% scientists list made by Stanford University.

***Unleash your potential to
become a professional
data scientist! ”***



MODULE 1 – DATA STRUCTURES & VISUALIZATION

Instructor: Prof. Anis Koubaa
Dates: 4 Saturdays—22 Oct, 29 Oct, 5 Nov, 12 Nov 2022
Time: 1 – 5PM

COURSE 1 - INTRODUCTION TO PYTHON

[1,000 SAR + 15% VAT | 4 hours]

- Python Environment Setup & Jupyter Notebook
- Python Programming Essentials—Loop, Conditions, Methods, Files
- Python Essential Data Structures—Lists, Dictionaries, Tuples, Sets
- Lambda Expressions
- Functional Programming—Map, Filter, Reduce
- Introduction to Common Data Formats: CSV & JSON
- Introduction to Character Encodings: ASCII, iso-8859-1, UTF-8

COURSE 2 - PYTHON DATA STRUCTURES

[1,000 SAR + 15% VAT | 4 hours]

- Numpy Arrays: The data scientist data structure for data analysis
- Pandas: The database-like data structure for data analysis

COURSE 3 - PYTHON FOR DATA VISUALIZATION

[1,000 SAR + 15% VAT | 4 hours]

- Matplotlib
- Seaborn
- Plotly & Geographical Plotting

COURSE 4 - CAPSTONE PROJECT

[850 SAR + 15% VAT | 4 hours]

Each student will define a proper data analytics projects according to his area of interest and then present it. The student will have the chance to apply the knowledge he learned in a real-world project and discuss its finding with data science experts.

All-Days Bundle: 2,500 SAR + 15% VAT



MODULE 2 – MACHINE LEARNING

Instructor: TBD
Dates: TBD
Time: TBD

COURSE 1 - PREDICTIVE MODELS

[1,500 SAR + 15% VAT | 5 hours]

- Introduction to Machine Learning
- Libraries (SciPy, scikit-learn)
- Linear Regression
- Polynomial Regression
- Multivariate Regression

COURSE 2 - CLUSTERING & CLASSIFICATION

[1,500 SAR + 15% VAT | 5 hours]

- Logistic Regression
- K-means clustering
- K Nearest Neighbors
- Support Vector Machines
- Decision Trees & Random Forests
- Bayesian Methods

COURSE 3 - CAPSTONE PROJECT

[850 SAR + 15% VAT | 4 hours]

Each student will define a proper data analytics projects according to his area of interest and then present it.

All-Days Bundle: 2,500 SAR + 15% VAT

REGISTRATION LINK



OR

<https://tinyurl.com/y6uu7p4c>

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www.riotu-lab.org | riotu@psu.edu.sa



MODULE 3 – DEEP LEARNING & NEURAL NETWORKS

Instructor: TBD
Dates: TBD
Time: TBD

COURSE 1 - NEURAL NETWORKS FOUNDATION

[2,000 SAR + 15% VAT | 8 hours]

DAY 1

- Introduction to deep learning
- Logistic Regression
- Foundation of Neural Networks

DAY 2

- Neural Networks Implementation with TensorFlow/Keras

COURSE 2 - CONVOLUTIONAL NEURAL NETWORKS

[2,000 SAR + 15% VAT | 8 hours]

DAY 1

- Fundamental Concepts of Convolutional Neural Networks (CNN)—Convolution, Pooling, Padding

DAY 2

- Image classification with CNN using TensorFlow
- Transfer Learning

COURSE 3 - FACE RECOGNITION

[2,000 SAR + 15% VAT | 8 hours]

DAY 1

- Face recognition foundations—Face Embedding, Siamese Networks, Face Recognition Models, Loss Functions (Triplet Loss)

DAY 2

- Face recognition using TensorFlow and Keras

All-Days Bundle: 4,000 SAR + 15% VAT