

Workshop “Python data analysis, AI and Machine Learning for Medical Physics”.

Start Date: July 24th, 2023 08:15

End Date: July 28th, 2023 13:00

Location: Faculty of Medicine and Pharmacy (Oujda-Morocco)

Registration: m.zerfaoui@ump.ac.ma

URL: <http://esto.ump.ma/fr/actualite/workshop-on-data-analysis-articial-intelligence-and-machine-learning-for-medical-physics-24-28-july-2023>

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Monday 24th

08:15 – 08:30 **Welcome**

08:30 – 09:00 Troubleshooting installation

09:00 – 10:00 Introduction: Data types, data structures, string manipulation and formatting

10:00 – 10:15 Coffee break

10:15 – 11:15 Walkthrough examples and hands-on session

11:15 – 12:30 Structured Programming: Control flow, modules, functions, intro to OOP

12:30 – 13:00 Navigating the PyCharm Integrated Development Environment

Tuesday 25th

09:00 – 10:00 Structured programming exercises

10:00 – 10:30 Working with files: Read/write csv, JSON, Excel

10:30 – 11:00 Coffee break

11:00 – 11:30 Operating System: directory traversal, path operations

11:30 – 12:00 Walkthrough examples

12:00 – 13:00 Panel data 1: Creation, import, selection, filtration, vector operations

Wednesday 26th

09:00 – 10:30 Panel data 1 exercises

10:30 – 11:00 Coffee break

11:00 – 12:00 Panel data 2: Reshape, concatenate, split-apply-combine sub-panels

12:00 – 13:00 Panel data 2: exercises

Thursday 27th

09:00 – 10:00 Visualisation: Plotting fundamentals using Matplotlib, Pandas, Seaborn

10:00 – 10:30 Walkthrough examples and hands-on session

10:30 – 11:00 Coffee break

11:00 – 12:00 String pattern matching using Regular Expressions

12:00 – 13:00 Walkthrough examples and hands-on session

Friday 28th

09:00 – 09:45 Introduction to AI

09:45 – 10:30 Introduction to Machine Learning in Diagnostic Radiology 1

10:30 – 11:00 Coffee break

11:00 – 11:45 Interacting with DICOM files: Create, read, modify, write DICOM tags

11:45 – 12:15 DICOM exercises

12:15 – 13:00 Introduction to Machine Learning in Diagnostic Radiology 2