

Training Program on **BASICS OF PYTHON AND APPLIED MACHINE LEARNING**

(Online Lectures + Hands on training)

Centre for Artificial Intelligence in Medicine, Imaging & Forensics (CAIMIF)

Starting from 15 Jan - 12 Mar 2025 (46 Hours total)



Lecture Time: 07:00 PM to 9:00 PM (ONLINE)
2:00PM to 4:00 PM

(Offline on Working/Odd Saturdays)

Venue for Hands-on-Support (1st, 3rd and 5th Saturdays):

Center for Artificial Intelligence in Medicine, Imaging and Forensics Room 103 B, Block 2, Sharda University

About Training Programme

The "Basics of Python and Applied Machine Learning" training program is designed to empower participants with the essential skills and knowledge needed to excel in the fields of programming and artificial intelligence. This program offers a comprehensive introduction to Python, covering foundational concepts and practical coding techniques. Participants will also explore key AI and machine learning principles, learning how to implement and apply these techniques to real-world problems. Through hands-on projects and guided exercises, attendees will gain practical experience in developing and deploying AI/ML models, equipping them with the tools to navigate the rapidly evolving tech landscape.

Objectives

- **Foundational Python Skills:** Equip participants with a solid understanding of Python programming basics, including data types, control structures, functions, and libraries, to ensure they can write and debug simple Python scripts.
- **Introduction to Machine Learning Concepts:** Provide an overview of key AI/ML concepts, such as supervised and unsupervised learning, model evaluation metrics, and common algorithms decision trees, random forests, support vector machines, and neural networks dealing with applications in classification, regression and clustering.
- **Practical Application of AI/ML Techniques:** Enable participants to apply AI/ML techniques using Python libraries (e.g., NumPy, Pandas, Scikit-learn) to solve real-world problems, including data preprocessing, model training, and evaluation.
- **Hands-on Project Development:** Guide participants through developing and deploying a simple Machine Learning (ML) project, from problem definition and data collection to model implementation and performance optimization, fostering practical experience and problem-solving skills.



Convener

Prof. Ashok Kumar

Head, Center for AI in Medicine
Imaging & Forensics Sharda University



Coordinator

Ms. Bushra Khan

Assistant Professor
SAHS & member CAIMIF

Trainers from Center for AI in Medicine, Imaging & Forensics (CAIMIF):



C. Mokaju Meitei

Technical Assistant



Navita

Technical Assistant



Sanju

PhD Scholar

Registration Link

<https://forms.gle/aNgxx4ByxhXEZqyz7>

Fee Structure

Module 1: Basics of Python	Rs. 2000
Module 2: Applied Machine Learning	Rs. 2500
Modules 1 & 2	Rs. 4000

Note: Certificates will be issued for each Module separately

Bank Details for online payment

Bank Name : ICICI Bank Ltd.
 Branch Address : Krishna Apra Royal Plaza, D-2, E(acb), Alpha-1, Greater Noida,
 Gautam Budh Nagar, UP- 201306
 Account Holder Name : Sharda University-Seminar
 Account No. : 025405005815 (CURRENT AC)
 IFSC Code : ICIC0000254
 SWIFT Code : ICICINBBCTS
 MICR Code : 110229037

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Schedule and Course Details

Timing: 7 pm – 9 pm (evening)

Module 1 (Basics of Python)			
Date	Day	Topic	Hrs.
15/01/2025	Wednesday	<ul style="list-style-type: none"> • Creating & managing python environments • Using <i>conda</i> and pip package managers to install and manage python packages 	2
17/01/2025	Friday	<ul style="list-style-type: none"> • Working with python using Jupyter notebook • Python Syntax • Operator and variables 	2
18/01/2025	Saturday	• Hands-on-support at CAIMIF lab, Sharda University	2
20/01/2025	Monday	• Data Types	2
22/01/2025	Wednesday	• Conditional Statements	2
24/01/2025	Friday	• For & while loops	2
27/01/2025	Monday	• Numpy Arrays and their manipulation	2
29/01/2025	Wednesday	• Numpy Functions	2
03/02/2025	Monday	• Pandas data types	2
05/02/2025	Wednesday	• Pandas DataFrames and their manipulation	2
07/02/2025	Friday	• Matplotlib	2
08/02/2025	Saturday	• Hands-on-support at CAIMIF lab, Sharda University	2
10/02/2025	Monday	• Seaborn	2

Module 2 (Applied Machine Learning)			
Date	Day	Topic	Hrs.
19/02/2025	Wednesday	• Introduction to AI and ML	2
21/02/2025	Friday	• Using Scikit-learn package for ML	2
24/02/2025	Monday	• Regression & Classification	2
28/02/2025	Friday	• Support Vector Machines (SVM) (Regression)	2
01/03/2025	Saturday	• Hands-on-support at CAIMIF lab, Sharda University	2
03/03/2025	Monday	• Decision Trees & Random Forest (Classification)	2
05/03/2025	Wednesday	• Decision Trees & Random Forest (Classification)	2
07/03/2025	Friday	• Clustering (k-means, Gaussian mixture)	2
10/03/2025	Monday	• Dimensionality reduction (PCA)	2
12/03/2025	Wednesday	• Dimensionality reduction (PCA)	2
Total Hours			46

N.B. Certificates will be issued for each Module separately