Skill Development Program

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Department of Statistics

Amity Institute of Applied Sciences

Amity University – Noida Campus

The **Skill Development Program** is a five-hour, hands-on workshop designed for students who are curious about Data Science and Artificial Intelligence but are taking their first steps into the field. No prior knowledge of Python, Machine Learning, or AI is required. The workshop is structured to help learners progress gradually, starting from basic orientation and coding fundamentals, and moving toward working with data, understanding logical thinking, and exploring how modern intelligent systems are built.

Throughout the workshop, participants will gain practical exposure to Python programming, data management, visualization, and widely used frameworks such as CRISP-DM. The program also introduces key concepts in Machine Learning, Natural Language Processing, and Generative AI, including modern approaches like Retrieval-Augmented Generation (RAG) and agent-based systems. Using tools such as Google Colab, GitHub, and VS Code, students will write real code, work on hands-on exercises, and develop the confidence needed to continue learning and building in the fields of Data Science and Artificial Intelligence.

Logistics

Softwares:

1. Download VS Code - https://code.visualstudio.com/download
2. Download Git - https://git-scm.com/install/windows
3. Download Github CLI - https://cli.github.com/
4. Download Python - https://www.python.org/ftp/python/3.14.2/python-3.14.2-amd64.exe

Accounts:

1. Google Account for Google Colab - https://colab.research.google.com/
2. Hugging Face Account - https://huggingface.co/
3. Github Account - https://github.com/

Resources:

1. Microsite - https://github.com/anantawasthi/202601-SDP-AU
2. Issues – https://github.com/anantawasthi/202601-SDP-AU/issues
3. Discussions - https://github.com/anantawasthi/202601-SDP-AU/discussions

The Skill Development Program is structured as a six-hour, hands-on learning experience designed for participants with no prior exposure to Python, Natural Language Processing, or Generative AI. The agenda follows a progressive learning path, moving from conceptual foundations to applied use cases and professional workflows.

Session 01: Orientation (Getting and Setting)

Session 02: Introduction to Git and GitHub

Session 03: Data Types and Structure in Python

Session 04: Logical Flow and Loops

Session 05: Functions and libraries

Session 06: Object Oriented Programming using Python

Session 07: CRISP-DM

Session 08: Data Management in Pandas

Session 09: Data Visualization using Matplotlib & Seaborn

Session 10: Feature Engineering

Session 11: Introduction to Machine Learning

Session 12: Natural Language Processing

Session 13: Generative AI

Session 14: Introduction to RAG & Agents

Intended Learning Outcomes

Upon completion of the workshop, participants are expected to:

- Understand the role of Python in Data Science and applications

- Write, Debug and execute Python programs

- Apply fundamental Machine learning & NLP techniques to real-world data

- Interact with Generative AI models using Python

- Understand modern development workflows involving Colab, VS Code, and GitHub

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Anant Prakash Awasthi is a Data Science and Artificial Intelligence professional and educator with extensive experience in applying data-driven and AI-based solutions across academic and industry settings. His work focuses on translating complex concepts in programming, machine learning, and artificial intelligence into clear, application-oriented learning experiences for students and early professionals. With a strong emphasis on practical pedagogy, he has been actively involved in designing and delivering skill development programs, workshops, and academic courses that bridge foundational theory with real-world implementation, particularly in Python, Data Science, Natural Language Processing, and Generative AI.

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