Python Programming for Beginners

31 March - 2 April 2025

Proudly brought to you by the School for Data Science and Computational Thinking at Stellenbosch University, Stellenbosch, South Africa.

1. Overview:
More data is being generated and stored than ever before. We generate data through various processes. For example, we generate data when we transact at a shop, when our smart watches record our steps, and when we record a Zoom meeting. Given the advancement in computational power and storage, we are using these stored datasets to make sense of the world around us and to make decisions. These decisions can help to advance business, health, sporting and other outcomes.

A key part of data science is learning how to code and use programming to build data-driven models. This workshop provides a beginner-friendly introduction to Python for data science. You will start with the basics of Python coding and gradually apply it to real-world data science problems.

2. Outcomes:

Participants will gain competency in the following:

- Fundamental Python programming concepts
- Data manipulation and analysis with Python
- Introduction to data visualization
- Python libraries such as such as Pandas, Matplotlib, Scikit Learn, Seaborn, Statsmodels, Numpy
- Practical exercises and real-world examples

3. Syllabus and Schedule:

The workshop is scheduled to take place from March 31st to April 2nd, 2025 with sessions held daily from 9:00 AM to 2:00 PM South African Standard Time (SAST).

The topic schedule is shown below:

		Session 1	Session 2	Session 3	Session 4
Day 1 31 March 2025		**Welcome & Setting Up the Coding Environment** 09:00 - 09:30 SAST	**Introduction** 09:30 - 10:50 SAST	**Tables and Data Types** 11:00 - 12:20 SAST	**Groups, Pivots, and Joins** 12:30 - 14:00 SAST
Day 2 1 April 2025		**Visualization, Charts, Histogram** 9:00 - 10:20 SAST	**Flow Charts** 10:30 - 11:20 SAST	**Conditions and Iterations** 11:30 - 12:50 SAST	**Functions** 12:30 - 14:00 SAST
Day 3 2 April 2025		**Capstone Project 1** 9:00 - 11:20 SAST	**Capstone Project 2** 11:30 - 13:30 SAST		**Closing** 13:30 - 14:00 SAST

4. Meeting Details:

Here is the Microsoft Teams link to join the session:

https://teams.microsoft.com/l/meetup-join/19%3ameeting_MTQ4ZTk4N2MtNTEzMi00MTM0LWFkMmMtZDMwM2NjZmI0NDlk%40thread.v2/0?context=%7b%22Tid%22%3a%22a6fa3b03-0a3c-4258-8433-a120dffcd348%22%2c%22Oid%22%3a%221196bf50-e7ea-4628-aa81-8b4a14e39328%22%7d

5. Presenters:

- Dr Sunday Oladejo
- Prof. Kanshukan Rajaratnam