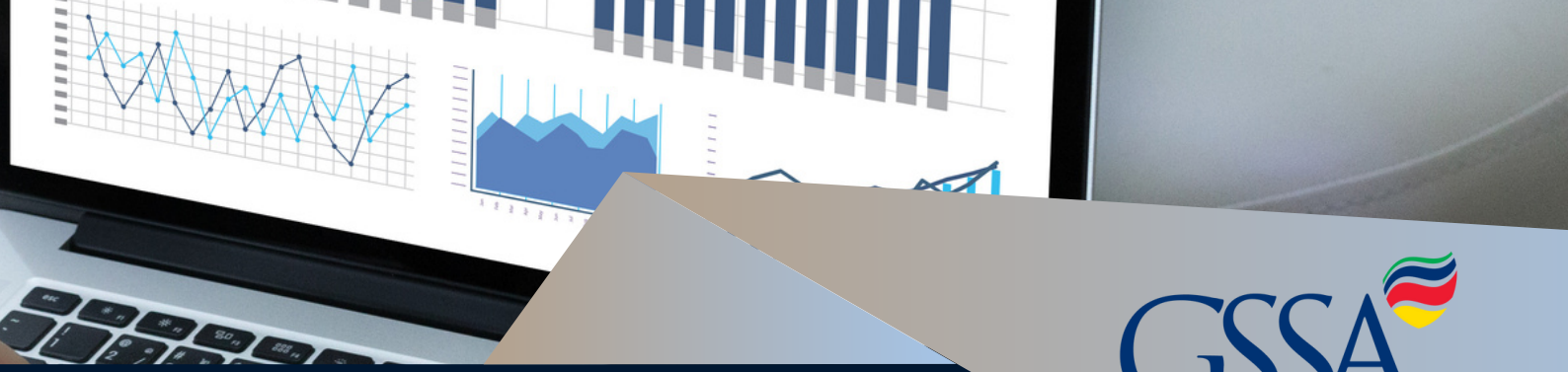

DATA ANALYTICS AND MACHINE LEARNING FOR GEOSCIENTISTS

GSSA
Geological Society of South Africa

18 & 19 OCTOBER 2022

8AM - 4.30PM

REGISTER NOW

CPD POINTS
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ABOUT THE WORKSHOP

2nd Annual Data Analytics and Machine Learning Course
This two-day workshop introduces geoscience students and practising professionals to the theory and application of spatial data analytics and machine learning.

You will learn to develop data-driven machine workflows for spatial data treatment, visualisation, lithofacies prediction and automated 3D block modelling using drill core/well logs, sourcing of satellite remote sensing data and extracting useful information for automated mineralisation anomaly detection, and stochastic simulation. As you build prediction and classification models, you will learn how to train algorithms using training data so you can predict the outcome for future datasets.

REGISTRATION

Members - **R2,500** | Non-Members - **R3,000** | Students/Retired/Academic - **R1,500**

The GSSA, in conjunction with their event partner(s), will sponsor a limited number of students. Click here for the application form.

COURSE INFORMATION

Specifically, the two-day course will teach you to:

- Effectively prepare data for Data Analytics and Machine Learning applications in order to ensure that conclusions drawn are trustworthy and reliable
- Gain insights from data using a lean workflow that incorporates outlier detection, data debiasing and imputation, feature engineering, and spatiotemporal modeling
- Understand the assumptions and limits of data precision, scale and coverage
- Create classification, prediction and spatial uncertainty models

By the end of the workshop, you will have a firm understanding of:

- Classification of lithofacies from drill core data
- Automated anomaly detection
- Dimension reduction and visualisation of gridded data
- Uncertainty quantification using stochastic models

Working environment

Python Integrated Development Environment (IDE) and Code Editors such as Jupyter Notebook, Spyder, Visual Studio, Visual Studio Code, PyCharm.
These packages will be installed during the 1st day of the course.

Location

TBC

ABOUT THE SPEAKER

Glen Nwaila

Prof. Glen Nwaila from the University of the Witwatersrand (@LinkedIn: Glen Nwaila
Link: https://www.linkedin.com/in/glen-nwaila-057786124/)

Glen received his BSc (Hons.) Geology from the University of Johannesburg, MSc in Chemical Engineering from the University of Cape Town, and a PhD in Geology with distinction from the University of Würzburg, Germany. He has more than 13 years of experience in research, teaching and industrial work in the field of economic and mining geology, geometallurgy, machine learning and hydrometallurgy.

Glen worked and collaborated with research and industry centres worldwide such as South Africa, Canada, DRC, Germany, Ghana, Sweden, USA, the United Kingdom, and Zambia. Currently, Glen holds the position of Director at the Wits Mining Institute and Adjunct Professor at the University of the Witwatersrand. His research interests are (1) genesis and evaluation of ore deposits, (2) machine learning applied to geology and mineral processing, (3) metal accounting, and (4) process optimization in hydrometallurgical plants. His most recent work focuses on impacts of digital transformation in the mining industry and the move towards data banks for process simulation and augmented reality.