

Petrogenium. Academy

Upstream (Geophysics)

Facies prediction along the wellbore using Machine Learning

Consultant / Trainer

Jaap Mondt



The **Petrogenium** (in collaboration with EPTS) **Facies prediction along the wellbore using Machine Learning** participants will gain a practical understanding of how Machine Learning is used to predict facies from well logs, learning the full workflow from data preparation to classification and regression tasks. They will experience hands-on exercises using open-source software to balance, standardize, and normalize datasets, then apply various ML algorithms such as Bayes, Logistic, Multilayer Perceptron, Support Vector, Nearest Neighbour, AdaBoost, and Trees for data classification.



Participants

This **Petrogenium**. course aims at all those interested in understanding the impact Machine Learning will have on the Geosciences and then specifically the impact on facies prediction on log data. Hence, geologists, geophysicists and petroleum and reservoir engineers, involved in exploration and development of hydrocarbon fields.



Learning Objectives

At the end of the course participants will have a clear idea how Machine learning, being part of Artificial Intelligence will impact the future of Geosciences. This will be evident from the examples discussed. The course uses a mixture of lectures, practical exercises and direct (workshop-like) participant involvement in discussions.

Programme

Day 1

1. Welcome, Program, Biography,
2. Intro ML
3. ML Tutorial
4. ML Open Source Software
5. Weka
 - Exercise 1 (Classification)
6. DNN
 - Exercise 2 (Comparison Algorithms)
7. Activation Functions
8. Forward and Backward Propagation
 - Videos: Geophysical Inversion versus ML, Deeplizard
 - Exercise 3 (Very limited labelled data) & 4 (Regression algorithms)
9. ML Fluid Substitution
 - Exercises 5 (Multilayer Perceptron Neural Networks)
10. Future of ML in Geophysics

Why select Petrogenium.?

The above support will be provided by principal consultants with 30+ years world-class experience in the technology and hands-on know-how from operation of refinery units.

Because Experience Matters

Contact Petrogenium.:

Email: training@petrogenium.com

Website: <https://www.petrogenium.com/training/>

Programme

Day 2

1. Summary Day 1
2. EM Inductive Sources, EM Grounded Sources
 - Exercises 13-15
3. EM Natural Sources
 - Exercises 16-18
4. EM GPR
 - Videos: YouTube
 - Exercises: 19-21
5. EM IP
 - Exercises 22-26
6. Course Evaluation

Why select Petrogenium.?

The above support will be provided by principal consultants with 30+ years world-class experience in the technology and hands-on know-how from operation of refinery units.

Contact Petrogenium.:

Email: training@petrogenium.com

Website: <https://www.petrogenium.com/training/>

Because Experience Matters