W9: Opportunities and applications for machine learning in exploration geophysics

Coordinator(s)	Stanislav Glubokovskikh / Andrew Valentine
Date(s)	Sun, Sep 01
Time	08:45 - 16:45
Location	Crown Perth
Summary	This workshop will highlight the potential of Machine Learning (ML) in exploration geophysics. This rapidly-developing technology has proven effective for big data analysis in many related disciplines, including environmental sciences, reservoir engineering, and meteorology. However, applications in exploration geophysics are still relatively scarce. This workshop will provide a gentle introduction to ML for practicing geophysicists, illustrated by case studies from industry and academia. We will also emphasise the limitations and potential drawbacks of ML, providing attendees with a balanced perspective on the strengths and weaknesses of this emerging technology.

Schedule*

Session 1

Overview of machine learning

- Introduction to concepts and techniques
- Survey of available methods and computational tools

Session 2

Machine Learning in practice

- Overview of a range of characteristic applications of ML
- Discussion of strengths and potential pitfalls

Session 3 & 4

Geophysical case studies

- Demonstrations of ML applied to exploration geophysics problems