

## EAGE/AAPG Digital Subsurface for Asia Pacific Conference-Session 1: Digital Reimagining Subsurface-23

### A case study of fully automated machine learning petrophysical interpretation using unstructured data

S. Karim<sup>1\*</sup>, P. Lucañas<sup>1</sup>, A. Nadrah Sazali<sup>1</sup>, N.M. Hernandez<sup>1</sup>, F. Baillard<sup>1</sup>

<sup>1</sup> Iraya Energies

#### Summary

---

Machine Learning (ML) has become widely used for regional studies and prediction of petrophysical interpretation and facies classification. In recent years, application of ML has shown significant benefit to improve productivity, decision making and success rate for regional exploration campaigns. However, while ML petrophysical prediction and classification provides expert based performance, it relies heavily on curated and validated raw logs for the algorithm to be trained on (Pham and al., 2019). In this paper we are going to present and investigate the broader usage the unstructured data for knowledge extraction and the use of it for better and more reliable ML petrophysical interpretation. This includes (1) The definition of wells as geological analogues and/or outliers using knowledge graph. (2) The automated extraction of regional parameters. (3) Validation of ML prediction using unstructured data.