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Machine Learning – the Magic Wand for the Mining Industry?

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Machine learning, Artificial Intelligence and Deep Learning are methods that are influencing and changing every industry, including the mining industry. Mining companies that are not following this train now will be left behind? And those jumping on the movement will be successful? There is a risk that the answer to the questions is no, but if exploited smart it is a clear yes.

The pre-requisites for success are 1, well defined issue to handle and 2, access to high quality labelled large dataset.

The issue that this article is focused on solving through Artificial Intelligence (AI) is a well-known issue related to classification of rock-types when logging lithologies, and any geologist that have been logging rock core would be able to relate to the issue. The task of logging and classifying rock types is very time consuming, subjective, and iterative. The subjective nature of the task means that it does vary based on the person, its educational background and of course, any previous experience. A classic saying is that if four geologists look at a piece of rock, there are at least five answers to what type of rock it is. The problem could escalate in a bigger picture as there is turnover of people in the industry the new persons need to be calibrated towards the task anew which takes time and does affect the quality and time of logging.

The high-quality dataset to be used to solve the rock type classification through AI in this approach will be a combination of a wide set of data that cover both visual and compositional aspects of the rock, acquired at high-resolution, standardized to a consistent quality and correctly depth related. The machine that provides this type of combined data is the Minalyzer CS.