Machine Learning in IP

Adopt and automate to enhance your workflows.

Interactive Petrophysics (IP), our market leading subsurface data interpretation package, can be utilized by E&P operators and service companies alike to derive deeper insights into their data.

As the adoption of machine learning and automation grows within the oil and gas industry, having the ability to use these techniques to automate and enhance your workflow is of great benefit.

Machine learning can help with different aspects of well log data from data quality control, data repair, and the prediction of missing data and well logs.

IP's machine learning suite of modules will assist with all of these applications using powerful, robust and mathematically proven algorithms.

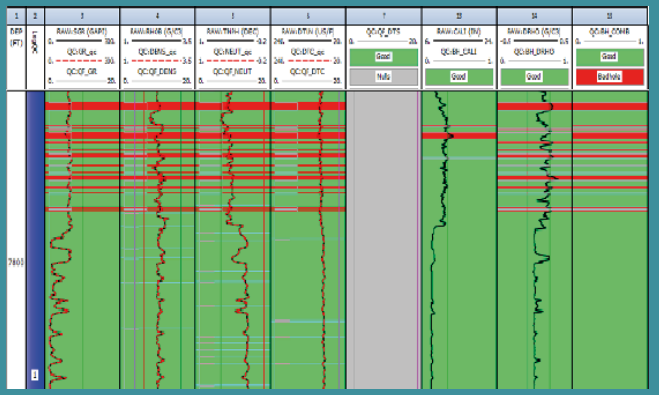
Our modules include Multiple Linear Regression, Self Organising Maps, Artificial Neural Networks, Fuzzy Logic, Domain Transfer Analysis, Clustering and Principal Component Analysis.

"Machine Learning is increasing in popularity within the geoscience domain and has many benefits to automating and improving petrophysical workflows. IP has a wide range of machine learning models built upon on robust mathematical methods to carry out curve prediction, curve repair and rock type classification"

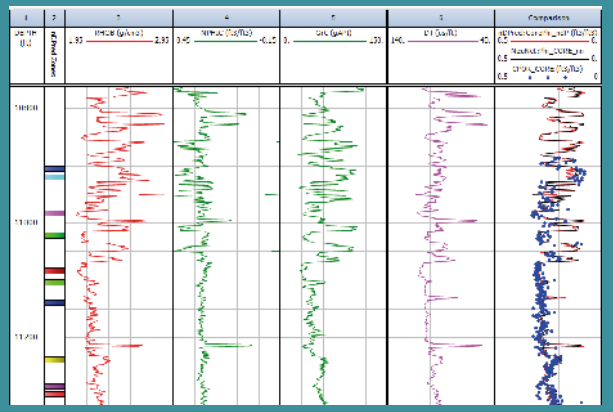
ANDY MACDONALD
TECHNICAL EXPERT

Geoactive

Well Log Data QC & Repair
The quality of well log data can be impacted by multiple borehole and instrument issues. These can be readily identified using the Log Data QC and repaired using machine learning algorithms in the Curve Auto-Edit module.

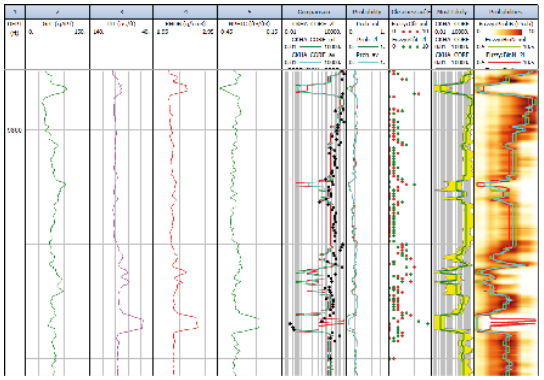


Domain Transfer Analysis (DTA)
DTA is a unique, non-statistical machine learning method developed for predicting petrophysical and geological properties from minimal data. DTA allows you to confidently predict outside the range of your training data.

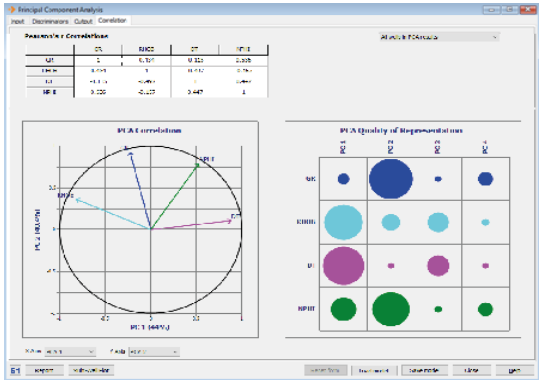


Interactive
Petrophysics

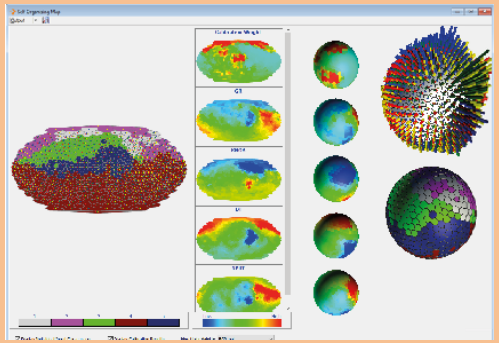
Continuous Curve Prediction
Predict missing data and full log curves using several fast and powerful machine learning methodologies including Artificial Neural Networks, Fuzzy Logic, Multiple Linear Regression, and Domain Transfer Analysis. A common interface between all modules allows effortless setup and easy model comparison.



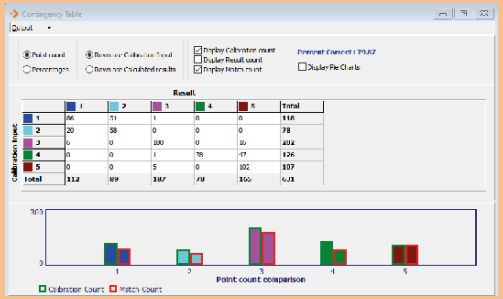
Dimensionality Reduction
Reduce high dimensional datasets into more manageable and relevant dimensions using our Principal Component Analysis module. The module helps you identify hidden patterns within your data and extract the maximum variance within your logging curves.



Reservoir Rock Typing
Enhance the characterization and geological understanding of your reservoir using IP's powerful classification algorithms (Cluster Analysis, Artificial Neural Networks and Self Organizing Maps) to derive accurate electrofacies. Build models from a select number of training wells with core and propagate to remaining un-cored wells within your field.



Evaluate Classification Accuracy
Following the successful classification of reservoir rock types or electrofacies, you can compare how successful the classifier performed against your real values from core. This is achieved using our contingency table module.



Get in touch

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