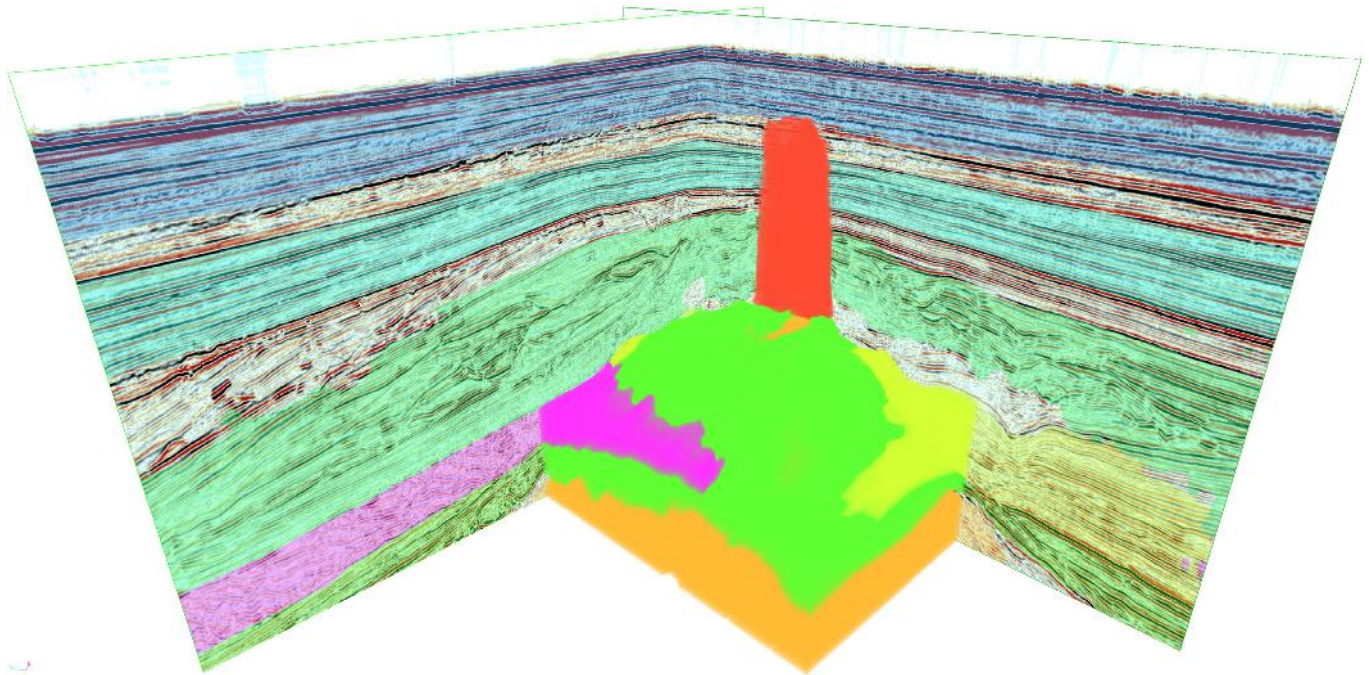


Deep Learning Seismic Facies Classification



Overview

Interpreters routinely analyze seismic data to find patterns that represent geologically important seismic facies. Built on deep learning technology, the Seismic Facies Classification tool in the Paradise AI workbench is fit-for-purpose for this important pattern-recognition task. The Seismic Facies Classification application finds patterns that have been selected by the human interpreter, identifying similar features in the seismic throughout the area of interest or in entirely different data sets. Using Seismic Facies Classification, interpreters work faster and with greater precision of results.



Volumetric display of a CNN-based seismic facies classification result.

How it works

A geoscientist identifies an area of interest through the use of a convenient polygon drawing tool. The application then calculates a series of attributes and meta-attributes to uniquely identify the selected area(s). One way of measuring this fit is the intersection-over-union (IOU) property. The IOU indicates the quality of the machine learning engine (the parameters and hyperparameters unique to training) by comparing the part of the interpretation that is withheld to the prediction. This measurement helps avoid overtraining the software while focusing on the most important areas. Typically, the IOU results are high when using Seismic Facies Classification.