# Striplog: new open source software for handling and analysing discontinuous and qualitative data

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Striplog is a free and open source Python package to help geologists and geophysicists explore and visualize non-continuous log data more easily. It handles data such as cuttings descriptions from wellbores, sedimentary logs from outcrop, or the results of data analysis on core samples. Flexibility and speed are key; the idea is to avoid the need for obscure data formats and proprietary software.

We do not provide a drawing tool, rather striplog objects can be constructed from continuous logs or combinations of logs, from formation or other interval tops, from tabulated data (e.g., in a CSV), from natural language descriptions of rocks (e.g., 'reddish grey fine-grained sandstone'), or in some circumstances from images of striplogs. Striplogs can plot themselves with arbitrary legends, or cast themselves as continuous logs, or tabulated data, or text formatted for inclusion in a Log Ascii Standard or LAS file. They have convenient features such as searching for interval features, replacement of one rock with another, filtering out all intervals below a certain thickness, interpolating across gaps, compiling basic statistics for an interval, and adding intervals together to form new ones.

Several features support machine learning tasks, which are emerging as approach to prediction in natural systems, but suffer from slow adoption partly because of data handling overhead. Striplog's data can be cast as integer vectors, which are commonly used as targets in classification tasks. For example, using Striplog we have used cuttings descriptions to train a K-Nearest Neighbours classifier to predict lithology from well logs. Striplog can also help visualize and understand prediction results, because prediction results can easily be cast back into striplog objects and compared with other data or processed further.

Striplog is still in early development but is available in the PyPi repository and can be installed with 'pip install striplog'. It will be especially useful for scientists already using Python or other programming languages in their work, since it has no graphical interface, but could be used to build a higher-level tool. The code runs under Python 2 or Python 3, and is shared under the terms of the Apache 2.0 license. The documentation is at striplog.readthedocs.org, and the code resides at github.com/agile-geoscience/striplog.

Atlantic Geology, 2016, Volume 52
Atlantic Geoscience Society Abstracts 42nd Annual Colloquium & General Meeting 2016
doi: 10.4138/atlgeol.2016.004