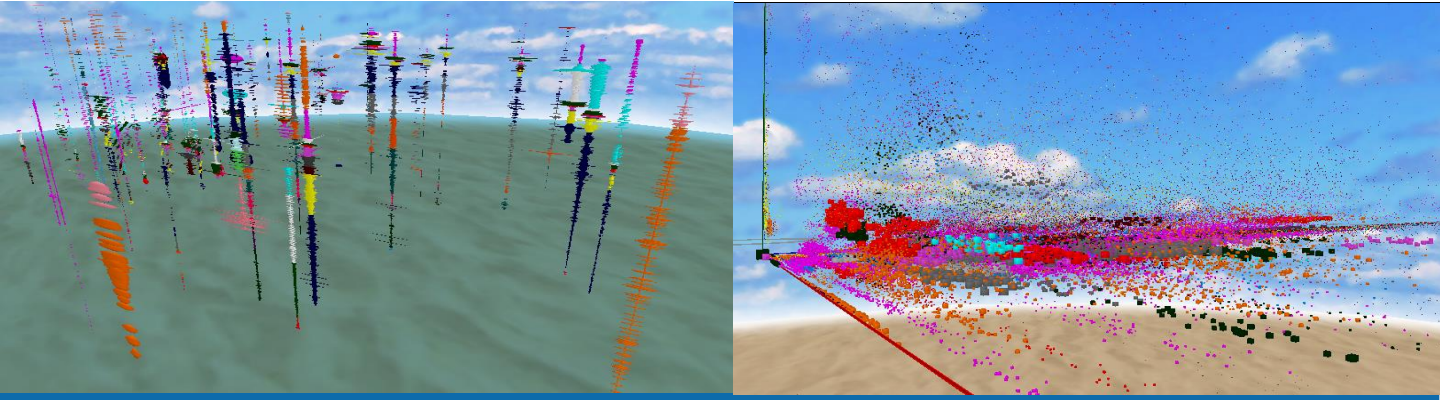
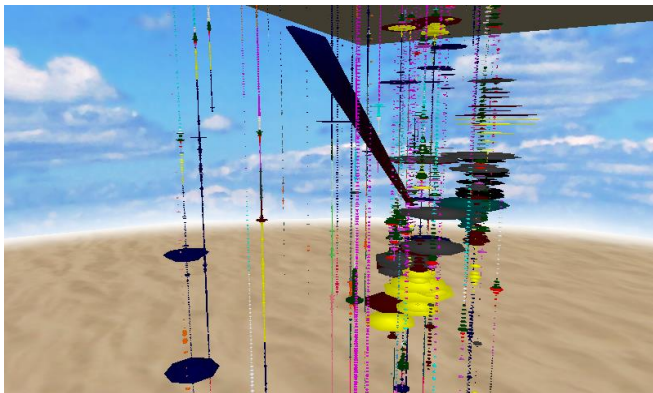
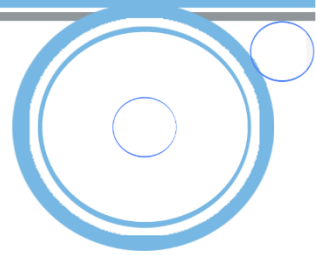


Oil Exploration Data

3D Visualisation of bore-hole sample data

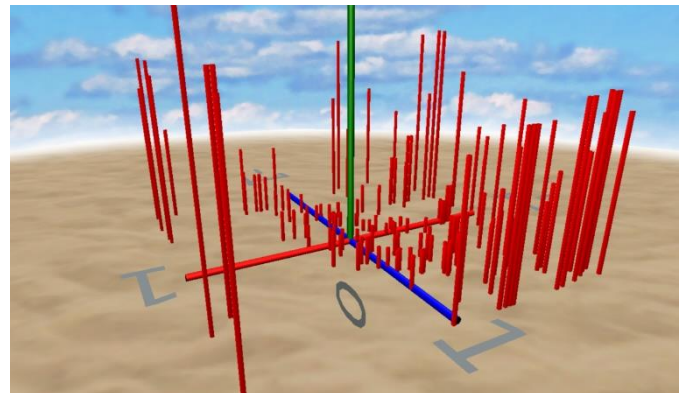


As part of an InnovateUK project and working with geochemical data analysis specialists IGI and Aston University, Daden were asked to look at the options for the 3D representation of geochemical data typically associated with oil exploration. Working with IGI and Aston University, Daden developed a number of visualisations to provide a new view of the data.



Plotting Data By Depth

The most natural visualisation, and probably the most effective, was showing the bore hole data as a depth chart, each bore hole being placed in the correct geographic location. Each core had around 100-1000 sample points, and the visualisation above uses colour to show the rock strata and then stretches each point along the X, Y and Z axis to show the measurements of HI, OI, and PI – 3 key indicators for the presence of oil or gas. Note how even within a strata there can be a sudden change in these indicators.



Dimensional Reduction

The original data contained around 20 dimensions of different measurements. With Datascape we can display around 10 dimensions simultaneously – but the visualisation may be too complex to interpret. So in this example dimensional reduction techniques were used to combine the initial dimensions into 3 abstracted dimensions that encapsulated the key characteristics of the data. This dimensional reduction set could then be plotted clearly in Datascape, and the resulting structure – an almost crater like shape - guides the user to the key relationships of interest.

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