Project 3: ML optimization model for oil and gas production

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Data source:<https://data.equinor.com/dataset/Volve>

Daily production data for five wells from an offshore oil/gas field in offshore North Sea area for the year 2016 to 2008 are planned to be analyzed with respect to choke size, average well head pressures, oil & gas production rate along with water production rate.

The data set cleaning process involves removing data against water injection wells, blanks, well closed/no on-stream conditions.

It is planned to attempt a Random Forests analysis using SCkit learn module in ML to figure out the data features importance. The production data for oil and gas are to be modelled based on multivariate non-linear regression while considering both trained and test data scenarios. Based on the model prediction probability, the further analysis by employing neural network will be attempted.

The final model accuracy can be tested when geologically similar field set up data are available.

Python, SCikit and other visualization tools are planned to be used for the project.