



M2 RESEARCH INTERNSHIP PROPOSAL IN ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Title : AI FOR AUTOMATE WELLBORE INTERPRETATION

Advisors : Sylvain Wlodarczyk (Schlumberger, SWlodarczyk@slb.com) & Nicolas Dobigeon (ANITI, nicolas.dobigeon@toulouse-inp.fr)

Level : Master 2 / 3rd year of Eng. school

Duration: 4 to 6 months

Allowance: ~600€/month

CONTEXT AND OBJECTIVE

Five years ago, Schlumberger started a project to automate wellbore data interpretation leveraging several machine learning algorithms (Clustering, Bayesian for inverse problem, BERT for NER, etc.). The current objective is to create an artificial intelligence from these models. As a milestone to achieve this final objective, the goal of the internship is to propose machine learning algorithms able to analyze wellbore data, possibly coming from heterogeneous sensors. The addressed tasks deal with estimation, inverse problems, and prediction.

INTERN RESPONSABILITIES

This is a R&D project run within a collaboration between ANITI and Schlumberger that could lead to a CIFRE PhD proposal. The Intern will work on Google Cloud Platform to leverage cloud computing. He/she will use pyspark to run intensive computation on big data. The deliverable will be a python proof of concept deployed on Dataiku. This PoC will aim at achieving as many automated tasks as possible on Equinor Volve field data that are today manually performed by petrophysicists.

CANDIDATE PROFILE

Prospective applicants should have a strong background in **signal/image processing**, **machine learning** or **applied mathematics** (probability & statistics, optimization, etc.), good scientific programming skills in Python for data science (Pandas, Scikit-learn, Pytorch, PySpark) and good communication skills in English, both written and oral. Particular interests in remote sensing and/or Earth observation will be appreciated.



PRACTICAL DETAILS

- Starting date : February – March 2021, for 4 to 6 months.
- The internship will take place at Schlumberger in Montpellier.
- The internship gratification is about 600€ per month.
- To apply, please send a detailed CV, official transcripts from each institution you have attended (in French or English), and a motivation letter to nicolas.dobigeon@enseeiht.fr

APPLICATION PROCEDURE

Formal applications should include detailed cv, a motivation letter, and transcripts of Bachelor's degree.

Applications should be sent by email to:

SWlodarczyk@slb.com & **nicolas.dobigeon@toulouse-inp.fr**

More information about ANITI: <https://aniti.univ-toulouse.fr/>