Rajvardhan Rawat

B.Tech. – Petroleum Engineering - IIT (ISM), Dhanbad

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EXPERIENCE

Cairn Oil and Gas — Intern (PE team)

Project – Integration and Analysis of Rock Mechanical data, MPLT data and Hydraulic Fracturing data of Raageshwari Deep Gas Field for optimization. (12th May,2021 - 21st July,2021)

Major Deliverables -

- Optimal Value of **proppant pumped/ Net pay**.
- A ML model to predict chances of facing a **Screen Out.** As a part of **risk reduction strategy**, Model is also capable of rendering average injection rate using which SO can be prevented.
- **Fracture skin** determination and its application to determine fracture job quality.

Lannet Technology Pvt. Ltd.-Data Science Intern

Project - Develop an Automated Machine Learning pipeline that will be packed as a product for customers like NGOs and Business Firms.
(5th Aug,2020 - 30th Sep,2020)

Task - To create general and robust functions for feature Selection, Segregation and date Engineering. To compare our product with available autoML products in the market.

Omak Technologies LLC, Texas – Intern

Mentor – Dr. Anil Kumar (Ph.D. Stanford, CEO at Omak)

Project: A general scheme for pressure transient analysis for a central well in a square reservoir with one side contacting the aquifer and other three boundaries closed. (1st Nov,2021 - 5th May,2022)

Major results:

- Inclusion of strength of water drive parameter ($\mathbf{f_{pai}}$)
- Python framework for **infinite image** generation to calculate dimensionless pressures.
- Development of new general correlations to directly calculate $\bar{p}_D$, p_{De}, p_{Dw} for pseudo stead state/ steady state time
- Discussion of a new shape factor C_{Ae}
- A **novel approach** to calculate cumulative water influx and discussion of its applicability using an example problem

Engineer's Club, Damietta, Egypt— Intern

Project - Robotics for Infrastructure and Industry Development.

Project Type - **Global Volunteer** (30th May,2019 -15th July,2019)

Experience - Explored almost an entire country, its people and culture. Learned Lego EV3 software. Taught students the importance of IOT and basics of arduino during the last week.

PROJECTS

Formulation, Characterization and EOR applicability of Tergitol based Nanoemulsion(NE)

- Formulated NE at different salinity using ultrasonication.
- Characterized samples on the basis of Long term Stability, Droplet size analysis (using DLS), IFT, wettability and rheology.
- Demonstrated stability by Turbiscan.
- To prove the applicability of formed NE. Optimal sample on the basis of Long term stability was chosen for core flooding experiment. An additional recovery of 14% was obtained by NE injection.

Tarners Method with application of ML

An Efficient iterative approach for Volumetric Oil Reservoir has been Programmed. Tree Based Algorithm is used to obtain a General Correlation between relative permeability and oil saturation. Project Link: Github

Wind farm layout optimization tool

Using streamlit a web app is created to maximize the AEP (Annual Energy Production) from the wind farms by providing optimum locations for wind turbines and minimizing wake effect. Project Link: Github

Projects using Python

Nodal Point Analysis With Python Github

Pressure Transient Analysis with Python Github

SPE IIT (ISM) SC Website (Live Project)

Lead the team consisting of frontend/backend developers, designers and content writers. Website being the face of the chapter is able to attract enormous participation in events hosted through it. Website Link - www.iitismspe.org

EDUCATION

Indian Institute of Technology (ISM), Dhanbad — B.Tech. In Petroleum Engineering

JULY 2018 - MAY 2022 OGPA-8.50 (Till 7th SEM)

St Xavier's Sr. Sec. School, Bhopal, Madhya Pradesh

12th - APRIL 2016 - APRIL 2017 - 88 %
10th - APRIL 2014- APRIL 2015 - 9.2

SKILLS

Advanced: PowerBI, Cpp, Python, ML, Emeraude

Intermediate: PHP, MySQL, MS Excel, deep learning, StimPlan

Beginner: Arduino, SLB (Eclipse), CMG

ACHIEVEMENTS AND ACKNOWLEDGEMENTS

- **Global Rank 10** in ML challenge to predict DTSM logs from other well logs organized by SPE-GCS.
- 1st prize in "Future Events"- hosted by SPE Bangalore section in association with **Royal Dutch Shell**. Presented a paper on **Direct Air Capture** using Electro Swing Method.
- 1st in **Flash maze** (robotics competition-technical fest) - Made a line follower and finished the maze in the least amount of time.
- 1st runner up in **Blueprint** - An event where teams are required to pitch events. An event called AuctaPitch was pitched.
- 1st runner up in **Robo- soccer**

POSITION OF RESPONSIBILITY

- **Programs Chairperson SPE-SC**
- **Head(Industrial Relation) SPE-SC**
  - Maintained Chapter's Integrity With the Industry Professionals
  - Successfully Conducted a 2 week Reservoir Simulation Workshop in association with Schlumberger.
- **Organizer** - Dept. event named HAUL N FALL at the techno-managerial fest. More than 200 participants took part. It was sponsored by ONGC. Served as Technical Head and successfully conducted a workshop.
- **Web developer cum Reporter** at Mailer Daemon (a student-run newsletter)
- **Media and Branding cell (SAIRC) -** The team is responsible for maintaining our institute's brand value and relations with Alumni.

EXTRACURRICULARS

- Blogger (Platform - Medium)
- Planting (Maintain a Roof Kitchen)