

Curriculum Vitae

Santiago Cuervo Rojas

Reservoir Engineer

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PERFIL

M.Eng. in Petroleum Engineering with +4 years of experience on integrated Reservoir Engineering, focused on the realization of optimal development plans of primary and secondary Oil & Gas reserves, applying transversal knowledge of geoscience, reservoir-well-surface, economic and risk. Great interest in the development of work tools through numerical programming languages (Spreadsheets, Octave and Julia). Knowledge in reservoir simulation for enhanced oil recovery applications such as water and steam injection. Comprehensive experience Reservoir-well-surface models nodal analysis and performance evaluation of artificial lift systems (ESP, UBH, PCP, UBM). Petrophysical characterization and quantification of reserves by volumetric methods, declination curves and material balance. Evaluation of exploration prospects with geological knowledge. Knowledge in the implementation of artificial intelligence algorithms. Able to build dynamic optimization models including deterministic and stochastic models for decision making and risk analysis. Good understanding of physical, mathematical and financial models for the economic evaluation of projects. Understanding the English foreign language and abilities to work in a multidisciplinary team.

Web Page Repositories: <https://github.com/scuervo91>

EXPERIENCE

July 2016 – July 2019

Omega Energy Colombia, Bogotá, Colombia
Integral Reservoir Engineer

Geosciences

- *Interpretation of well logs*
- *Development tool visualization and analysis of well logs (Scheduled in Julia)*
- *Evaluation of Prospects (Volumetry and Risk)*
- *Development of Geostatistics tool for the settlement of properties*
- *Development Stochastic tool using Monte Carlo simulation for calculations of resources and reserves (programmed in Octave)*

Reservoir

- *Evaluation of Reserves (Balance of Matter and Declination Curves)*
- *Interaction with Certifiers*
- *Development Forecast tool for the production of crude oil and / or gas reservoirs integrated into a model of material balance and nodal analysis (programmed in Octave)*
- *Reservoir Characterization Models (Fluid-Rock)*
- *Analytical models for the evaluation of incremental production models*
- *Interpretation of well pressure tests*
- *Definition of development plans (Primary and Secondary)*
- *Development of reservoir simulation models Black Oil 2 Phases (programmed in Octave)*

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Production	<ul style="list-style-type: none"> - Construction of Nodal Analysis for oil and gas wells for production optimization. - Monitoring of parameters of artificial lifting methods (PCP, ESP, Jet Pump) - Development Evaluation tool and performance of ESP system, UBH (Programmed in Octave) - Basic design of lifting systems
Operations	<ul style="list-style-type: none"> - Guard in the daily operations of production - Strategies for process optimization
Development Tools	<ul style="list-style-type: none"> - Development of Julia Language complementary packages for the Oil & Gas industry in the Geosciences, Reserves, Production, Economic and integrated areas. (Developing). - Developed Packages - WellLogs.jl → Visualization of Well Records and Petrophysical calculations https://github.com/scuervo91/WellLogs.jl - WellProductivity.jl → Productivity analysis, IPR Declination, VFP https://github.com/scuervo91/WellProductivity.jl - Geomechanics.jl → Geomechanics Analysis focused on Unconventional Reservoirs https://github.com/scuervo91/Geomechanics.jl - WellTesting.jl → Well pressure Test (DrawDown & BuildUp) https://github.com/scuervo91/WellTesting.jl - LlinearSolvers.jl → Linear system of equations solvers to implement on Reservoir Simulation https://github.com/scuervo91/LinearSolvers.jl - MachineLearning.jl → Implementation of basic algorithms of machine learning https://github.com/scuervo91/MachineLearning.jl - Packages to Develop - Reservoir Analysis - MBE, Simulation, PVT, Pressure Testing - Economic Analysis - Economic Evaluation - Integration - Machine Learning
2015 – 2016	IKM Information Knowledge & Management, Bogotá, Colombia Oilfield Data analyst – <i>Hocol Project: Sorting Oilfield data through metadata, and uploading into documental software to be easily available whenever is required.</i>
2013-2014	Hocol S.A., Bogotá-Colombia Jr Reservoir Engineer Thesis: <i>Publication: “Technical evaluation of steam drive injection, cyclic steam injection and Steam-Assisted gravity Drainage in a field on Llanos basin through simulation”: PVT Analysis; Adjustment of equations of state; simulation model Constructions; Uncertainty analysis; development plans using probabilistic methods; Financial Evaluation.</i>
2012 – 2013	Indra Colombia, Bogotá, Colombia Junior Engineer: PAI-OPENWELLS project. Analyze and register chronologically information about operational jobs made in the Ecopetrol wells, like work-overs and well-service ensuring the quality of the data. Transfer that information from the

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corporate software to OpenWells

2010-2011 **National Oilwell Varco de Colombia**, Barrancabermeja, Colombia
Internship:
Tracing the solid waste treatment operations and water control for drilling muds in La Cira Infantas Field.

EDUCATION

July 2019 **M. Eng. In Petroleum Engineering**
Universidad de Los Andes, Bogotá- Colombia

2014 **B. Eng in Petroleum Engineering**
Universidad de América, Bogotá – Colombia

Curse - 2016 **Reservoir Geomechanics**
Stanford University

SOFTWARE SKILLS

Microsoft Office	Advanced Excel, Word, PowerPoint
Oil Wells tools	OpenWells, Profile, Data Analyzer
Nodal Analysis	Prosper – Gap -Mbal Basic
Reservoir Simulation	IMEX – STARS – WINPROP - CMOST
PVT Simulators	WINPROP-PVTSIM-KAPPA PVT
Probabilistic Simulators	Crystal Ball – @Risk
Decision Making	Expert Choice – HiView – DPL – Crystal Ball - Hugin
Optimization	Excel Solver – OpenSolver – Linear Programming Xpress – Non Linear Programming Gams – Crystal Ball
Math	MatLab - Octave
Seismic	Petrel - Opendtec

LANGUAGE

- Spanish – primary language for speaking, writing, reading
- English – secondary language for speaking, writing, reading B1

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MEMBER

- SPE COLOMBIA – SOCIETY OF PETROLEUM ENGINEERS

DEVELOPMENT INTEREST

- Development of OIL & GAS Tools in Programming Language: Geosciences, Deposits, Production, Economic Evaluation, Machine Learning, Integrated Models

REFERENCES

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