JUAN JOSE FERNANDEZ ALVAREZ

979-450-1915 ◊ juanchito29@gmail.com
3525 E 143rd Av, Thornton, CO, 80602
linkedin.com/in/juanjfa/ ◊ www.juanchito29.github.io/home

SUMMARY

Highly accomplished and enthusiastic technical leader with more than 12 years of experience in the Oil & Gas industry. Exposure to onshore/offshore development and international exploration projects. Demonstrated analytical and quantitative skills, with experience leading technical teams in the application of physics-based and data driven models for production, reservoir and field development optimization. Energetic professional passionate about agile development, data management, technology and data storytelling to influence and generate actionable results. Fluent in English, Spanish and intermediate levels in French and Portuguese.

AREAS OF EXPERTISE

- Reservoir Simulation
- Rate Transient Analysis
- Pressure Transient Analysis
- Integrated Production Modeling
- Probability
- Economics
- Statistics
- Machine Learning
- Random Forests
- Unsupervised Classification
- R, Python
- Spotfire, PowerBI, Tableau

EDUCATION

12/08	**Texas A&M University**	College Station, Texas
	M.S. in Petroleum Engineering; GPA: 3.88/4.0	
06/04	**University of Zulia**	Maracaibo, Venezuela
	B.S. Mechanical Engineering; GPA: 3.56/4.0 (rank: 5/128)	

PROFESSIONAL EXPERIENCE

12/16 – Present	**Occidental Petroleum / Anadarko Petroleum (acquisition)**	Denver, Colorado

Reservoir Engineering & Analytics Supervisor – Rockies Business Unit

- Lead newly established multi-disciplinary team in the use of physics-based and data-driven models.
- Coordination, execution and analysis of design of experiments (DoE).
- Optimal field development via ensembled modeling: frac-res simulation (extrapolate) & data-driven (interpolate).
- Coupled frac and reservoir simulation for completions and spacing sensitivities.
- Supervised & supervised modeling for predictive & prescriptive analytics via clustering, linear, tree and ensemble modeling.
- Creation of first-of-its-kind individual well prediction for well and section level optimization.
- Feature Engineering for optimal model performance and accuracy.
- Economic Engine platform to enable economic optimization at scale.
- Cloud technology deployment for computational speed.

01/16 – 11/16	**Anadarko Petroleum Corporation**	Denver, Colorado

Staff Production Engineer – Project Manager: Integrated Production Surveillance and Optimization (IPSO)

- Product manager/owner of enterprise platform for onshore production operations surveillance and optimization
- Lead 3rd party software developers in the implementation of production engineering optimization workflows
- Coordinate user acceptance testing (UAT) in partnership with onshore operations
- Support development, testing and production environments and backlog tracking
- Agile product development via scrum and sprint implementation

01/16 – 11/16	**Anadarko Petroleum Corporation**	Platteville, Colorado

Production Engineering Supervisor – Rockies Integrated Asset Management

- Lead newly established production engineering team on the utilization of IPM modeling for onshore operations.
- Establish first-of-its-king onshore reservoir/production optimization workflow for an unconventional asset.
- Commercial and legal contracts for partnership with Petroleum Experts.
- Lead partnership with onshore operations and completions on utilization of engineering workflows.

08/14 – 02/15	**Anadarko Petroleum Corporation**	The Woodlands, Texas

Sr. Reservoir Engineer – International Exploration – South America

- Support G&G staff with commercial evaluation of prospects in offshore Colombia.
- Responsible for prospect inventory and portfolio management.
- Preparation of economic evaluations for AFE package support documentation.
- Coordination and support of pressure (MDT) and sampling operations during drilling operations.

05/12 – 08/14	**Anadarko Petroleum Corporation**	The Woodlands, Texas

Sr. Reservoir Engineer – Mozambique International Operations

- Well testing operations (offshore Mozambique in water depths from 1000-1600m on board the Deepwater Millenium.
- On-site support for decisions involving modifications of well test flow sequence based on equipment constraints.
- Perform on-site nodal analysis and choke calculations to adjust surface equipment to achieve expected flow rates (as per test design).
- On-site Pressure Transient Analysis and interpretation.
- Incorporate results from PTA in reservoir model, perform reservoir simulation and adjust test design on the fly if necessary.
- Responsible for coordinating and supporting operations working with multiple service companies.
- Reservoir Simulation and History Match using structured/unstructured grids.

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- Support IPM modeling and simulation using Petroleum Experts suite (Prosper, Mbal, GAP).
- Support completion strategy of development wells in Mozambique using Nodal Analysis.

11/11 – 05/12	**Anadarko Petroleum Corporation**	Denver, Colorado

Reservoir Engineer – CBM PRB –Deep Horizontal Play
- Responsible for developing a workflow to utilize nodal analysis to evaluate and optimize artificial lift in horizontal wells.
- Developed workflow to utilize OFM to perform decline curve analysis on operated and non-operated wells.
- Support the creation of a completion database to identify drivers in production performance.
- Support the creation of a database to track competitor activity in the Basin.
- Competitor studies combining well performance, decline curve analysis and completion data.
- Economic evaluation of NON-OP AFEs.

06/11 – 11/11	**Anadarko Petroleum Corporation**	Denver, Colorado

Reservoir Engineer – CBM PRB – Asset Team
- Responsible for estimating reserves for current discoveries and uncaptured opportunities, and responsible for SEC reserves studies, lease sale analyses and acquisition evaluations.
- Support construction of annual budget, corporate planning and business development needs as necessary.
- Assist in various budget and planning exercises for entire CBM assigned area in addition to non-op specific assets (budget, portfolio, MBX management, SEC reserve forecasts, etc.).
- Conduct special project evaluations in support of JV contract negotiations, midstream opportunities and asset level economic look backs
- Liaise with JV operators with regards to development planning, cost scheduling and performance tracking.

11/10 – 06/11	**Anadarko Petroleum Corporation**	Denver, Colorado

Reservoir Engineer – CBM PRB – Special Studies Team
- Member of Special Studies Team in charge of developing workflows and creating skillset to improve forecasting methodology on the CBM reservoir engineering team through an expanded CBM toolkit that included Fekete Fast CBM, Welltest, OFM and SpotFire
- Project lead in well testing developing CBM well testing workflow including methodology, test design, execution, data gathering and analysis using Fekete WellTest and Sapphire.
- Recommend, manage and integrate various reservoir studies including reservoir modeling, geochemistry, PVT, production performance, pressure transient tests and other data in planning future development.
- CBM performance studies, prepare field development plans, production forecast, reserve estimates, and carry out economic analyses.
- Perform CBM simulation studies for better prediction of performance and reserves adds.
- Plan and evaluate development drilling and workover requirements, prepare technical work program AFEs and justifications.
- Utilize CBM software to identify appropriate production mode for potential development.
- Develop and design well testing programs, evaluate and interpret well test data to estimate reservoir properties, predict future well performance and identify ultimate reserves.
- Identify and apply appropriate new technology to estimate reserves, forecast well performance to minimize production uncertainties.
- Compile detailed engineering reports of studies performed and prepare numerous technical presentations for delivery to asset team, management, partners and regulatory agencies.

01/09 – 11/10	**Anadarko Petroleum Corporation**	Gillette, Wyoming

Base Production Engineer/Team Lead – CBM PRB
- Assist field operations to optimize existing production and reduce operating cost by providing recommendations to optimize dewatering.
- Design and selection of artificial lift systems for gas-well dewatering with a special focus on ESP systems.
- Evaluation and optimization of artificial lift systems using nodal analysis to model different wellbore configurations and the impact on productivity and equipment performance.
- Work with artificial lift providers in tracking failures and identifying opportunities to optimize equipment performance.
- Technical and economic evaluation of wellwork operations to optimize coalbed gas productivity.
- Optimization of surface equipment for gas and water transportation and selection of gas and water metering equipment.
- Aid in monitoring performance of surface production facilities and production processes.
- Maintain base production by prioritizing workovers, providing procedures, actively supervising daily wellwork activities, and maintaining acceptable economic results.
- Prepare recommendations for improvement in production operations and evaluate facilities expansion requirements.
- Provide support to wellwork operations by designing tools using 3D CAD software
- Compile detailed engineering reports of studies performed and prepare numerous technical presentations for delivery to asset team, management, partners and regulatory agencies.

09/07 – 12/08	**Department of Petroleum Engineering. Texas A&M University**	College Station, Texas

Graduate Research Assistant
- Design of a high-pressure research flow loop for the experimental investigation of liquid loading in gas wells (MS Thesis)
- Developed a skillset using IPM modeling software to perform Nodal Analysis and evaluate surface networks to optimize full field development strategies.

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05/08 - 08/08	**TOTAL E&P USA INC.**	Houston, Texas

Internship in Offshore Field Operations
- Developed a program to manage PDG (Permanent Downhole Gauges) data to be used for well testing and production analysis.
- Derived explanations for unexpected organic deposition for a well, and recommended mitigation strategies.
- Generated process flow diagrams in Excel to compare equipment design with current operating conditions.
- Reviewed correlations commonly used to study liquid loading
- Generated macro in VBA to calculate minimum gas velocity and flowrate for all available models.
- Conducted feasibility study on production enhancement by chemical injection using foaming agents.
- Conducted a study to verify hydrate plugging during slickline operation to replace a leaking SCSSV.
- Flow assurance program to estimate chemical to use, volume and rate.
- Created Phase diagrams to identify reservoir fluid types based on PVT analyses performed on all wells.

02/07 - 08/07	**Department of Petroleum Engineering. Texas A&M University**	College Station, Texas

Graduate Research Assistant
- Evaluated the technical and economic feasibility of adapting alternative sources of energy to power drilling rigs.

02/04 - 12/06	**John Crane Venezuela C.A**	Maracaibo, Venezuela

Applications Engineer
- Selected and designed all parts involved in a mechanical sealing system.
- Provided field assistance for the installation of mechanical seals when needed.
- Conducted plant inspections to verify performance of the products and to evaluate opportunities for improvements.
- Provided technical-economic proposals to improve sealing solutions in rotating equipment.
- Developed failure analysis reports.
- Involved in multidisciplinary teams to establish Six Sigma practices in different productive processes within the company.

05/03 - 06/04	**Wood Group ESP**	Maracaibo, Venezuela

- Design of a transmission system for reels used to store and transfer power cables in electric submersible equipment.
- Developed preventive maintenance plans for the machinery shop and test banks.
- Modified hydraulic system of a spooler.
- Designed an electric system for spooler operation.

SKILLS
- Petroleum Engineering: PEEP, Nexus, IPM (PROSPER, MBAL,GAP), Kappa (Saphire, Topaze, Rubis, Diamant), Rodstar, OFM, Fekete Harmony, Bivius, OpenWells, AutoCAD 2D & 3D, SOLID EDGE 2D &3D, Microsoft Access, Visual Basic.
- Computer skills: Python, R, VBA, Jupyter notebooks, SQL.
- Data analytics: Pandas, Numpy, scikit-learn, matplotlib, seaborn, TensorFlow, Keras.
- Data storytelling: PowerBI, Spotfire, Tableau
- Languages: English (fluent), French (intermediate), Portuguese (intermediate) and Spanish (mother tongue).

AWARDS & PUBLICATIONS
- Paper SPE 170829, "***Evaluation of Reservoir Connectivity and Hydrocarbon Resource Size in a Deep Water Gas Field Using Multi-Well Interference Tests"*** presented at the 2014 SPE Annual Technical Conference and Exhibition held in Amsterdam, The Netherlands, 27-29 October 2014.
- Paper SPE 122786, "***Design of a High-Pressure Research Flow Loop for the Experimental Investigation of Liquid Loading in Gas Wells"*** presented at the 2009 SPE Latin American and Caribbean Petroleum Engineering Conference held in Cartagena, Colombia, 31 May–3 June 2009.
- 2009 Faculty Award of Excellence for Outstanding Research at the Master's Degree Level. Harold Vance Department of Petroleum Engineering, Texas A&M University, College Station, TX, May 15 2009
- Sessions winner and first place in the 11th Annual Student Research Week. March 2008.
- Recipient of the John Calhoun Fellowship. Harold Vance Department of Petroleum Engineering. 2007.
- Beneficiary of student scholarship of the Gran Mariscal de Ayacucho Foundation. 1998-2004.

ORGANIZATIONS
- Society of Petroleum Engineers (SPE).
- American Society of Mechanical Engineers (ASME)