Contact

www.linkedin.com/in/venkataramanaputcha (LinkedIn)

Top Skills

Engineering
Petroleum
Reservoir Engineering

Languages

Hindi (Full Professional)
English (Full Professional)
Telugu (Full Professional)

Certifications

Intermediate Python for Data Science
Introduction to R
Statistical thinking in python-part 1
Deep learning in Python
Supervised Learning with scikit-learn Course

Publications

A Fast and Robust Compositional, Multi-Phase, Non-Isothermal Wellbore Hydraulics Model for Vertical Wells

Venkat Putcha

Senior Data Scientist at OspreyData, Inc.
San Juan Capistrano, California

Summary

A professional with 4+ years of experience focussed on optimization, delivering insights and solutions by developing diagnostic, predictive and prescriptive models. Synergic implementation of data science, machine learning, physics based modeling and numerical simulation is my passion and forte.

Experience

OspreyData, Inc.
2 years 4 months

Senior Data Scientist
June 2018 - Present (1 year 10 months)
Orange County, California Area

Data Scientist
December 2017 - Present (2 years 4 months)
Orange County, California Area

Devising methodologies and developing models to detect, classify and rectify abnormal states pertaining to sub-optimal and failure conditions based on IoT sensor stream from industrial data.

Penn State University
4 years 5 months

Teaching Assistant
January 2015 - December 2017 (3 years)
State College, Pennsylvania Area

Responsibilities include lecturing in Professor’s absence, holding course review sessions, supervision of ongoing group exercises, assisting with in-class assignments, contributing questions to assignments, exams and grading.

Courses include:

1.Applied Reservoir Analysis and Secondary Recovery- 2015

2.Well Test Analysis-
2015
3.Rock and Fluid
Properties-2015
4.EMS Seminar-2016
5.Production Engineering Lab-2016 & 2017

Doctoral Candidate and Research Assistant
August 2013 - December 2017 (4 years 5 months)
State College, Pennsylvania Area

Integration of numerical and machine learning methods for gas-lift optimization:

Machine learning and Data
sciences:
• Designed and developed integrated numerical-machine learning tools that are 2-4 orders of magnitude faster than the corresponding numerical models for coupled reservoir-wellbore simulation
• Demonstrated an improvement in estimated net revenues worth $5.2-6.0 million from a well in a Middle Eastern field by applying the developed optimization tools
• Validated the developed numerical and ANN based wellbore hydraulics models with field data, observed an average deviation of 2-8 %
• Applied Monte Carlo analysis to provide probabilistic estimates of total oil produced from a well based on the uncertainties of reservoir parameters
• Performed sensitivity analysis using random forests to estimate the behavior of the ANN predictor variables for the wellbore hydraulics and gas lift optimization models

Modeling and Simulation:
• Developed numerical, multi-phase reservoir simulators in compositional and black-oil formulations
• Engineered a numerical, compositional, multi-phase and non-isothermal wellbore hydraulics model
• Designed ANN based simulation tools for prediction of wellbore hydraulics in compositional systems
• Compiled a PVT simulation toolbox akin to PVTSIM, comprising of EOS based two-phase flash, stability, phase envelope, physical properties prediction algorithms

• Developed modules for C7+ characterization, component lumping, black-oil property generation, simulation of CVD, CCE and differential liberation tests using compositional data

The numerical simulation has been prototyped in MATLAB and programmed in C++

Team Captain
April 2016 - October 2016 (7 months)
State College, Pennsylvania Area

Captained the Penn state petrobowl team to its best performance, achieving the third place in the global event, Petrobowl-2016,Dubai

ONGC
Assistant Executive Engineer (Production)
March 2010 - August 2013 (3 years 6 months)
India

As a part of the Artificial Lift Team of ONGC, Ankleshwar:
• Designed the gas lift system, performed activation, monitoring and troubleshooting of 125 oil wells in the Gandhar field
• Analyzed the SCADA systems to detect sub-optimal well performance, leakages and flow assurance problems
• Optimized oil production and gas usage by debottlenecking the production systems of Gandhar oilfield
• Scheduled,monitored and analysed over a 100 cases of stimulation, tubing clean-up, work-over jobs, wells tests and bottom hole surveys, in co-ordination with reservoir and well-services teams
• Assembled monthly reports detailing the key performance indicators and inventory management of the artificial lift systems in the asset

Projects Executed:
• Evaluated and steered the installation of an alternative booster compressor system for transporting produced gas, resulting in incremental revenues worth $1.4 million per year
• Developed a simulation module for well models and surface facilities of the Gandhar field: 125 Wells, 8 Separation Stations

Performance Appraisal Rating:
2011-12: 96.1% (A+)
2012-13: 98.0% (A+)

• Received Oil and Natural Gas Corporation Ltd.(ONGC), India,
team achievement award for performance during the year 2011-12

SRF Limited
Senior Executive (Production)
July 2009 - February 2010 (8 months)
India

• Led a team of eight people to achieve production targets, analyze data logs, update design parameters to reduce non-conformities by 6%

Education

Penn State University
Doctor of Philosophy (PhD), Energy and Mineral Engineering: Petroleum Engineering · (2013 - 2017)

National Institute of Technology Tiruchirappalli
Bachelor of Technology (BTech), Chemical Engineering · (2005 - 2009)