Harsh Biren Vora

Data Scientist | Software Engineer

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Work Experience

Data Scientist 05/2020 – Present
The Stevenson Company *Nashville, TN*

- Build and maintain data pipelines to ingest, process, and prepare data (ETL) for statistical modeling using MySQL database.
- Apply Bayesian statistics and machine learning to optimize retail sales volume of appliances using sales and shipping data.
- Develop and deploy algorithms to identify fluctuations in market price, geographic distribution, and floor location of retail appliances, reducing operational cost and manual analysis time by 50%.

Software Engineer 09/2019 – 05/2020
Halliburton *Houston, TX*

- Developed data-driven history matching microservice for cloud native offering of Nexus reservoir simulator using proxy flow modeling techniques, enhancing economic modeling of four test assets by 13%.
- Developed consumer analytics reports by correlating performance and outputs of Nexus reservoir simulator with code changes.
- Reduced the bug count of Nexus software service by 25% by designing and executing manual and automated software tests.
- Added 100+ customer datasets to regression suites to ensure engineering and software testing coverage for software service.

Software Engineering Intern 06/2018 – 08/2018
Halliburton *Houston, TX*

- Utilized data mining, unsupervised machine learning and cross-correlation techniques across multiple geophysical datasets to visualize and locate 4 zones for potential hydrocarbon exploitation in Amberjack field, Gulf of Mexico.

Data Science Intern 06/2018 – 08/2018
Halliburton *Houston, TX*

- Developed data-driven forecasting techniques for hydrocarbon production using application of the Ensemble-Kalman filter, improving the production forecast for seven producing wells by 37% in Utica Shale Play.

Computational Geoscientist (Part-Time) 07/2014 – 05/2017
ConocoPhillips *Houston, TX*

- Developed a database of global well logs and drilling reports, reducing redundancy in technical repository by 20%.
- Applied regression analysis to improve a global pore pressure prediction model by cross-correlating interpreted well logs and drill cuttings; model achieved an accuracy of 92% on dataset of 100+ wells.

Education and Research

PhD in Geophysics 05/2014 – 08/2019
Rice University (4 peer reviewed publications; GPA: 3.87/4.00) *Houston, TX*

- Developed a neural network model to forecast time-to-event of fracture onset from statistical parameters of acoustic recordings; engineering boosted deep learning model to achieve 82% accuracy over 12 datasets of 1000+ events.
- Applied the lattice Boltzman method to model fluid flow through nanoporous media using high performance computing; computational models achieved 78% accuracy against laboratory datasets using regression analysis.
- Utilized unsupervised machine learning and discrete element modeling to characterize energy budget during fracturing in rocks.

B.Tech in Petroleum Engineering 08/2009 – 05/2013
Pandit Deendayal Petroleum University (GPA: 7.92/10.00) *Gandhinagar, India*

- Applied economic optimization using Net Present Value analysis to design production models for four hydrocarbon wells.

Technical Skills

- **Programming**: Python (Numpy, Scipy, Pandas, scikit-learn, Tensorflow, Keras), MATLAB, FORTRAN (novice), MySQL, Bash, R.
- **General Proficiency**: Linux/Unix, MS Office, Adobe Illustrator, Git, Agile Framework, Team Foundation Server.
- **MOOC's:** Differential Equations, Probability, Bayesian Statistics, Differential Equations, Java Programming Basics.
- **Certifications**: Python Data Science (*IBM*), Labview, ArcGIS, Statistical Learning, Data Visualization with Tableau.

Leadership and Awards

- American Association of Petroleum Geologists Rice University Student Chapter: President (2018), Vice President (2017).
- Mills-Bennet Fellowship for outstanding research in computational hydrogeology, Rice University (08/2017 – 05/2018).
- British Petroleum Scholarship (08/2015) and Baker Hughes Scholarship (05/2014) for academic excellence in physical sciences.
- Teaching Experience: Quantitative Hydrogeology (2016), Introduction to the Earth (2017), Petroleum Systems Analysis (2018).