

Timothy Richard McNealy

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Optimization Engineer via Data Mining, Software Development and Simulation

Experienced in Oil & Gas Completion Design, Petrophysical Analysis, Hydraulic Fracturing Simulation, Reservoir Simulation, Production Analysis and Optimization, for both Conventional and Unconventional Reservoirs from various parts of the world, covering over 40 formations in 7 basins. Utilize a diverse background to integrate into existing analyses or building a custom analysis to ensure success of a project. Intrinsically a curious person that enjoys solving problems, learns new skills quickly, and tends to be relentlessly realistic.

Technical Skills

Programming:	+17y:C#, C++, Cuda, C, VBA; +8y:R, SQL, Matlab, Python, HTML, JavaScript
Hydraulic Fracturing:	Gohfer, FracPro PT, PredictK, Materials Library, IFS / HalWin
Petrophysical Analysis:	Geolog, Prizm, Landmark Petrophysics
Reservoir:	Fekete R.T.A. and Well Test, Landmark Nexus, Quiklook
Geology:	Landmark DecisionSpace
Diagnostics:	TerraVista, PDAT
Data Analysis / Mining:	Spotfire, R Studio, Machine Learning / Neural Networks
Microsoft Office:	Excel, Word, PowerPoint, Access

Professional Experience

NINDRA, Houston, TX

ENGINEERING SOFTWARE (Lead Engineer & Developer), Houston, TX

4/2019 –

- Developed a High Performance Nonlinear Constrained solver and transform utilizing the GPU(Kokkos/Cuda) to solve an under-determined equation in Laplace space. The new solver reduces the time to solve from 8 hours (in Matlab) to 1 minute in C++/C#.
- Built a PostgreSQL/Apache Thrift database containing +40 GB of Texas RRC data sources. Currently developing a ASP.NET app to use online with Docker to leverage the database for use with the new solver.

HALLIBURTON, Various locations

1/2005 – 4/2019

RESERVOIR SOLUTIONS (Senior Technical Advisor), Houston, TX

11/2017 – 4/2019

- Technical Advisor on Cypher projects, integrating distributed acoustic / temperature sensing, micro-deformation and microseismic data into Gohfer for building a calibrated fracture model.
- Built custom Spotfire plugin for importing microseismic data to constantly determine the fracture extents.

NORTH AMERICA TECHNOLOGY TEAM (N.A. Technology Advisor), Houston, TX

7/2015 – 11/2017

- StimXpert Champion for production analysis in Spotfire and RStudio.
- Beta tester, validation and development of the integrated complex fracture model.

Accomplishments:

- Built custom flow regime production decline analysis to analyze 360K+ wells to help determine the economic viability of re-fracturing candidates.

CAIRN RAAG DEEP PROJECT (Technical Lead), Gurgaon, India

11/2014 – 7/2015

- Team Lead for the Cairn, India, Raag Deep Project.
- Tasked with integrating the analysis from the other team members.

Accomplishments:

- The first well put online out produced the entire field by increasing initial liquid production 11-fold.
- Integrated Gohfer, Quiklook and DMS into an economic optimization analysis based on production.

BUSINESS DEVELOPMENT (Eurasia Technical Team Manager), Moscow, Russia 7/2014 – 11/2014

- Expanded role to all of Eurasia.
- Worked with Consulting on Unconventional Petrophysical analysis and modelling Unconventional production in Nexus.

BUSINESS DEVELOPMENT (Russia Technical Team Manager), Moscow, Russia 12/2013 – 7/2014

- Challenged with building a technical team, engaging and transferring Unconventional knowledge to customers and to all of Halliburton in Russia.

DIGITAL SOLUTIONS (C&P Applied Engineering Manager), Houston, TX 5/2013 – 12/2013

- Managed team of three Reservoir Engineers and a Drilling Engineer.
- The team was influential in guiding Halliburton software toward better integration and filling functionality gaps for the entire Cypher project workflow.

Accomplishments:

- Played a significant role in pioneering Halliburton's Cypher Service which increased production and lowered costs for operators all over the world.

SOUTH TEXAS TECH TEAM (Technical Sales Advisor), Houston, TX 9/2010 – 5/2013

- Business Development and Operations support role.

Accomplishments:

- Saved Halliburton millions by designing and implementing an operational efficiency matrix (stimulation treatments) to track Non-Productive Time (NPT).

PERMIAN BASIN TECH TEAM (Principal Technical Services Specialist), Midland, TX 9/2007 – 9/2010

- Dual role as a sales representative and job designer for stimulation and conformance treatments using Gohfer / FracPro PT / Prizm.
- ExactFrac champion for Microseismic Analysis.
- DFIT Instructor.
- Began training on Reservoir Engineering, Drill Stem and Production Buildup and Decline Analysis.

Accomplishments:

- Optimized horizontal fracture spacing for Yates Petroleum in the 3rd Bone Spring, today it is still one of the highest producing wells per foot in the Delaware Basin.

FIELD ENGINEER (Technical Professional), Artesia, NM 2/2006 – 9/2007

- Monitored and reported treatments.
- Continued training in Stimulation (Gohfer), Log Analysis (SHALELog), Coiled Tubing, Foam Cementing and Conformance Treatments.

Accomplishments:

- Sold \$4M of Expedite to Yates Petroleum.

FIELD ENGINEER (Associate Technical Professional), Hobbs, NM 7/2005 – 2/2006

- Phase Two of Field Engineering training, on-site overseeing of well treatments.

TRAINING (Associate Technical Professional), Alice, TX 1/2005 – 7/2005

- Field Engineering training in stimulation (frac / acid), formation evaluation, stimulation and wireline operations / equipment, pumping diagnostics, FracPro, Prizm, Logging Q&A.

Education**Bachelor of Science (BS), Mechanical Engineering, Minor: Math, Texas Tech University, Lubbock, TX** 5/2004

Addendum

Formation Experience

Permian Basin:	Abo, Atoka, Bell Canyon, Blinberry, Bone Springs, Caballos, Canyon, Cherry Canyon, Cisco, Clearfork, Delaware, Devonian, Ellenberger, Fusselman, Glorietta, Grayburg, Mississippian, Morrow, Pennsylvanian, Queen, San Andres, Seven Rivers, Spraberry, Strawn, Vacuum, Wichita Albany, Wolfcamp, Yates, Yeso
South Texas:	Austin Chalk, Eagle Ford, Olmos, Wilcox
Russia:	Bazhenov, Domanik
Kazakhstan:	Triassic, Jurassic
India:	Felsic, Basalts, Fatehgarh
Azerbaijan:	Fasila, Myakop
Argentina:	Vaca Muerta

Publications

- Effective Fracture Placement in Horizontal Wells, Southwestern Petroleum, <https://www.swpshortcourse.org/papers?combine=Effective+Fracture+Placement+in+Horizontal+Wells>
- Highly Accurate Prediction of Screenouts in the Eagle Ford Shale with the Screenout Index, SPE, <https://www.onepetro.org/conference-paper/SPE-157613-MS>
- Proppant economics in the Eagle Ford formation, Hart Energy, <https://www.hartenergy.com/exclusives/proppant-economics-eagle-ford-formation-19236>
- Multi-Porosity Modeling for Unconventional Reservoirs, Southwestern Petroleum, <https://www.swpshortcourse.org/papers?combine=Multi-Porosity+Modeling+for+Unconventional+Reservoirs>

Innovations

- US10344591B2, History Matching Multi-Porosity Solutions, <https://patents.google.com/patent/US10344591B2>
- Software, Hydraulic Fracturing Operational Efficiency Tracker, IFS, Word, Excel and Access
- Software, Step-Down Analysis App, C#
- Software, Limited Entry Friction App, C#
- Software, Nexus Structured Grid Builder, C#
- Software, Gohfer Model Integration into Nexus Structured Model, C#
- Software, Multi-Porosity Production Analysis, C# & Matlab

Awards

Eagle Scout, Troop 175, Midland, TX, 1998, https://www.westtexascoutinghistory.net/award_eagle_btc.html