Machine Learning, Deep Learning & AI in Oil & Gas
Omni Houston Hotel at Westside
April 19-20, 2016

Keynote Speakers

Tarun Chandrasekhar
Technology Solutions Director for Business Development and Exploration, BP Lower 48 Onshore

Mark Reynolds
Senior Solutions Architect Technical E&P Applications, Southwestern Energy

Sammy Haroon
Director, Palo Alto Innovation Center and Director, Global Enterprise Data Analytics Group, Baker Hughes

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A word from the CEO of Energy Conference Network:

There is no doubt that 2016 will see sustained oil price volatility. Companies will require new tools and strategies to survive this downturn and prepare for better times ahead.

Artificial Intelligence and Machine Learning have enabled operators to augment human capabilities – to automate processes and gain previously unobtainable outcomes. With massive amounts of computational power, machines can now analyze large sets of data points and apply relationship modeling in a predictive way and in real time. Big Data technology has the potential to leverage machine learning capabilities enabling accurate and real time decision making improving overall operating efficiency and reducing unnecessary cost.

This conference is the perfect platform to discuss the adoption of Machine Learning and Deep Learning techniques and technology in the oil and gas industry. It brings together industry experts, professionals and solution providers to share their insights and real world applications.

At the conference you will hear:

- Real world case studies of companies benefiting from the utilization of Machine Learning techniques and technology
- Hear from leading technology and solution providers who are transforming this industry and can help make businesses efficient and competitive

We believe this conference is a must attend for oil and gas and technology professionals keen to find a competitive advantage in their business.

We look forward to meeting you in April.

Sincerely,
Symon Rubens
CEO, Energy Conference Network

Upcoming Energy Conference Network Events

NATIONAL CONTENT IN MEXICO SEMINAR
MAY 18, 2016
Houston, TX

IOT IN OIL AND GAS EUROPE
JUNE 8-9, 2016
Aberdeen, Scotland, United Kingdom

IOT IN OIL & GAS 2016
SEPTEMBER 14-15, 2016
Houston, TX
Day One April 19, 2016

AGENDA

8:30 AM
Chairperson opening remarks

INNOVATION AND IMPLEMENTATION

8:45 AM
Machine Learning: “You want the truth? You can’t handle the truth!”

Machine learning (ML) has had a slower adoption rate in the oil and gas industry and though there are many supporters there are also many skeptics about the real value it can bring. This presentation will show proof of concepts, applications in the field, challenges and solutions for ML within the oil and gas industry, and will also seek to answer many of the common questions raised. What is the reality of ML for companies in the oil and gas industry? Are we on the hype cycle? We heard that Google was doing it so we should try it as well? Do our engineers and scientists believe that a machine can solve the problems we encounter accurately enough to consider using ML? Oil and gas sits at Andy Grove, Co-Founder of Intel’s Inflexion Point – Is ML going to drive the us to new heights or . . . ? What areas are going to be the first adopters of ML? What are some of the examples in the field that are currently being used?

Sammy Haroon
Director
Palo Alto Innovation Center & Enterprise Data Analytics
Baker Hughes

9:15 AM
Data Babble

Today’s data is often lost to those who need it, disorganized when it is needed quickly, and incomprehensible to people whose job is to understand it, or just plain wrong. New technology promises to solve those problems, make us efficient, and make us richer. All too often, we fail to realize the value of data and what needs to be done about it, so that realizing the vision of the “digital value chain”?

Tarun Chandrasekhar
Team Lead-Data Management
Technology Solutions Manager
BP Lower 48 Onshore

9:45 AM
Morning break and networking

10:30 AM
Case Study - Running Internal Data Science Challenges - How Chevron bought together data science competitors to discover new insights and potential solutions

A competition that brings together a group of data science competitors to address a problem stands a better chance of finding the best solutions. Chevron has run two internal data science challenges - each open only to company employees and addressing an actual business problem. The challenges were conducted in phases:

• Startup – labeled and blinded data and documentation were made available to contestants
• Model development – contestants developed models with labeled data and made predictions on blinded data. Predictions were scored and model accuracy feedback relative to other competitors was provided via a challenge website
• Final evaluation – contestants selected their best models for final evaluation, and made predictions on a distinct, blinded dataset. These were scored to determine challenge winners.

Both challenges resulted in new insights and potential solutions to the problems addressed, and in the identification of analytical talent within Chevron.

Cole Harris
Data Scientist
Chevron

11:00 AM
Best Practices in IIoT, IT/OT Integration, and Leveraging Machine Learning and Advanced Analytics to Deliver Business Value

Best practices in choosing, designing, and implementing from the portfolio of analytical methods including real-time, geospatial, machine learning, statistical, and “big data”

• How can we shift our time and focus from ensuring data quality and data preparation to performing advanced analytics and delivering business value?
• How do we operationalize the results from our advanced analytics and models and perform plan vs actual financial based analytics?
• How can business value be rapidly attained in scale and sustained over time?
• How to we integrate IoT/IIOT, pervasive sensing, and the cloud into my companies existing data fabric security and with context and exploit advanced analytics?
• How to we integrate our connected ecosystem of suppliers, customers, and stakeholders and realize the vision of the “digital value chain”?

Craig Harclerode, Global O&G and Industrial Chemicals Business Development Executive

11:40 AM
Road Map to Constructing a Top Down Machine Learning Paradigm

E&P organizations are turning more attention to accumulated data to enhance operating efficiencies, safety, and recovery. The computing paradigm is shifting, the O&G paradigm is shifting, and the rise of the machine learning paradigm requires careful attention to top-down integrated systems engineering. A system approach will be presented to stimulate out-of-the-box thinking to address the machine learning paradigm.

Mark Reynolds
Senior Solutions Architect
Southwestern Energy

12:10 PM
Networking Lunch

1:10 PM
Current & Emerging ICS Cyber Threats

Understanding ICS Cyber Risks
Overview of current global ICS Cyber Attacks and Threats
Emerging cyber threats to ICS and potential impacts

Mike Saylor
Executive Director
Cyber Defense Labs

1:40 PM
Industrializing Machine Learning as a Key Tool in the Midst of Chaos

Dr. Arvind Battula
Senior Data Scientist
Schlumberger

2:10 PM
Afternoon break and networking

2:40 PM
Disrupting a Legacy Industry

• Disruptive technologies poised to reinvent the oil industry
• Deep Learning and Machine Intelligence’s Disruptive Evolution

Noy Dhunay
CEO
Imubit

3:10 PM
Predicting Critical Events from Sensor Data without being a Data Scientist

Using machine learning to predict critical events from sensor data requires a construction of a mathematical model that describes the dynamic system at hand. Such dynamic model construction and maintenance generally requires an intersection of data science and domain expertise. Such combination is a scarce resource even in the largest of organizations. This talk will discuss cases in which this exhaustive dynamic modeling may be eliminated, overconsuming an expensive bottleneck.

Gilad Cohen
CEO
Imubit

3:40 PM
Closing remarks and conference close

3:45 PM
Cocktail Reception
Day Two April 20, 2016

AGENDA

8:00 AM
Registration

9:00 AM
Opening remarks

9:10 AM
How Machine Learning Complements and Enables the Industrial Internet of Things
Steve Jennis
Industrial Internet Consortium
Prism Tech

OPTIMIZATION

9:40 AM
PREDICTIVE MAINTENANCE USING AUTOMATED ADVANCED ANALYTIC TECHNIQUES AND AI
• Automated Anomaly Detection (IoT device and sensor level)
• Advanced Prescriptive Analytics (given a prediction, how do you optimize the outcome?)

Rob Patterson
VP Product Marketing
Thingworx- PTC

Eric van Gemeren
VP Research and Development
Flowserve

10:10 AM
utilization of Machine Learning in New Production System Selection
• Machine Learning utilization to analyze field data and forecast production system performance
• Benefits of historical data utilization in Artificial Lift and Chemicals businesses

Emanuel Marsis, PhD.
Production Modeling and Stimulations Engineer
Baker Hughes

10:40 AM
Morning break and networking

11:10 AM
Improve Forecasting Asset Performance and Asset Health through Implementing Predictive Models
• Building models that use historical data to predict asset performance
• Continuously improving models using historical data

Stuart Gillen
Director of Business Development
Spark Cognition

11:40 AM
Innovation Showcase
I2k Connect – Dr. Eric Schoen, Engineering Director
Simularity- Ray Richardson, CTO
Contextere- Carl Byers, Chief Strategy Officer

12.40 PM
Networking Lunch

1:40 PM
Enhancing Predictive Capabilities Using Real time Anomaly Detection
• Processing data in real time to improve anomaly detection
• Ensuring algorithms are up to the challenge

Subrat Nanda – Senior Data Scientist and Analytics Lead
Matthew Krueger- Analytics Engineering Lead and GM of Aero Remote Services
GE

2:10 PM
Scaling Models to Work Across Global Assets
Opportunities for translating established Machine Learning models from one asset to another. Consideration of similarities and differences across global asset or fleet types; the need to modify predictions based on unique vs generic process designs

Gilbert Haddad
TLM Analytics Lead
Schlumberger

2:40 PM
Data driven solutions to reduce unplanned downtime
• Obtaining real time insight, contextualizing and visualizing the data to eliminate unexpected failures
• Applying historical data and using effective modeling to connect data points previously not evaluated to predict asset performance and prevent failures

Eric van Gemeren
VP Research and Development
Flowserve

Usman Shuja
Vice President of Market Development
Representative form Spark Cognition

3:10 PM
Overview and wrap up

3:20 PM
Conference Close

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