Watson for Natural Resources

Drive innovation and monetize your technology investments!

Calgary Geoscience Data Managers Society (CGDMS)

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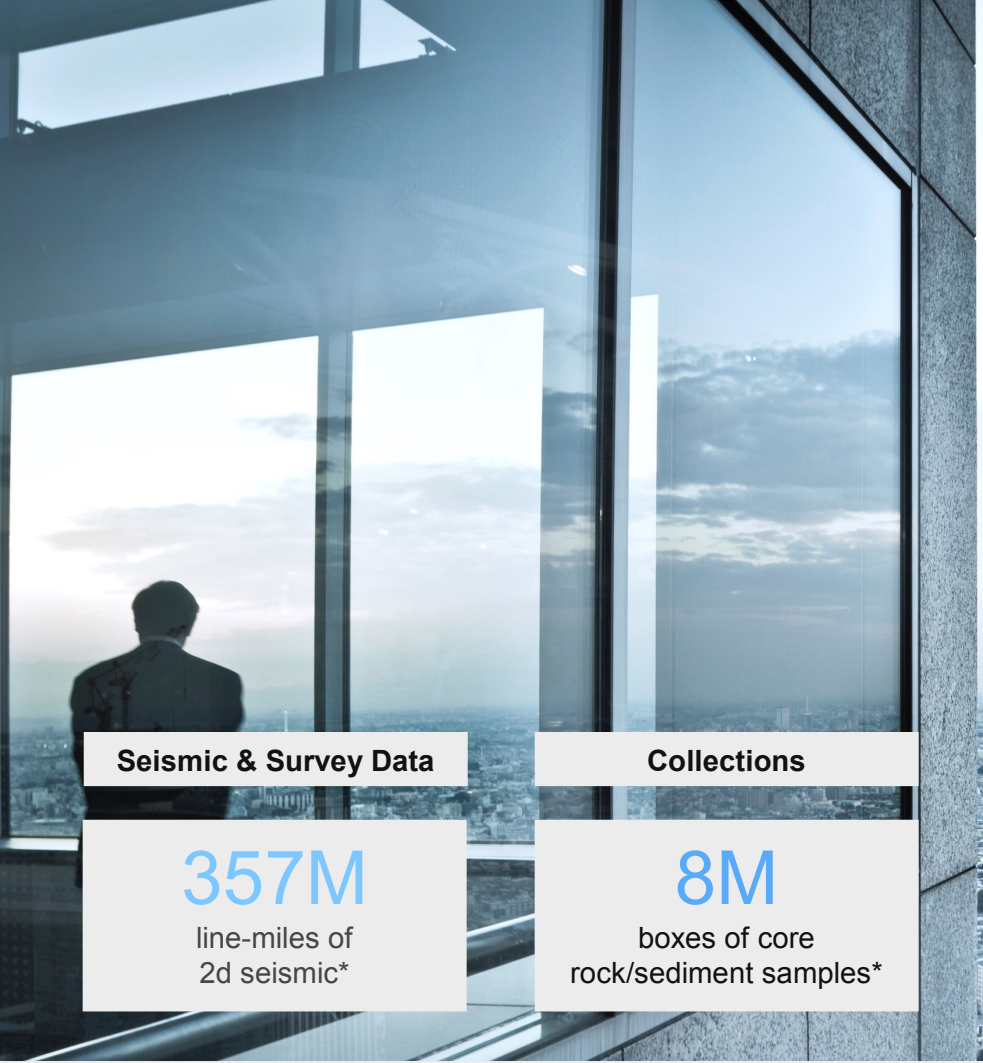
Geoscience Data Challenges



"Accurate assessment of the total volume of geoscience data and collections in the United States has been a challenge primarily because of inaccurate or insufficient metadata about geoscience materials." – *The National Academies of Sciences, Engineering, and Medicine (1999)

Seismic & Survey Data	Collections	Well Logs	Fossils
357M line-miles of 2d seismic*	8M boxes of core rock/sediment samples*	46M boxes of paper, films, fiche, and tapes*	123M specimens

“Despite the large volume of geoscience data in the United States, some portion is in immediate danger of being lost because of inadequate space or incentive to retain those worth keeping.”

- https://www.nap.edu/read/10348/chapter/4

1,000 feet (333 boxes) of rock core laid out inside the Bureau of Economic Geology Core Facility, University of Texas at Austin. These rows represent data from four wells. Given the average increase in core and cuttings holdings annually, these 333 boxes represent approximately 2 months of average growth.

- SOURCE: David M. Stephens, Bureau of Economic Geology, The University of Texas at Austin.

Let’s consider…

Human Analysis

46M / (325,000 * 12) = 11.8 years

Boxes of Well Files divided by (US Geoscientists1 multiplied by Boxes Analyzed per Year) equals Years to Complete

Machine Learned Analysis

46M / (1 * 138M2) = 0.33 years

Boxes of Well Files divided by Machine Learned Algorithm * multiplied by Boxes Analyzed per Year) equals Years to Complete

1 Source: American Geosciences Institude, “Total Employment in Geosciences 2014”

2 IBM Watson analyzes 8M pages per second; 1000 pages averaged per box

IBM Watson Background

Cognitive Systems Powered by IBM Watson

1 Billion Watson users in 2017

IBM Watson is **Transforming Industry**

IBM Watson IoT and Industry Innovation

Enabling new business models with integrated solutions built on the IBM Watson IoT Platform

Transform traditional business with the capabilities of IoT

- Drive customer relationships and experiences.
- Improve operational efficiency and reduce costs.
- Deliver new products and business models.
- Drive better customer engagement.
- Leverage Watson technology for cognitive solutions.

Cognitive systems are creating a new partnership between humans and technology

Humans excel at:


Common Sense


Dilemmas


Morals


Compassion


Imagination

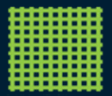

Dreaming


Abstraction


Generalization

Cognitive systems excel at:


Natural Language


Pattern Identification


Locating Knowledge


Machine Learning


Eliminate Bias


Endless Capacity

What are organizations like yours saying about cognitive computing?

We surveyed more than 600 decision makers worldwide to discover insights about cognitive adoption

IBM Watson Use Cases

Cognitive Systems Powered By IBM Watson for smarter natural resource discovery

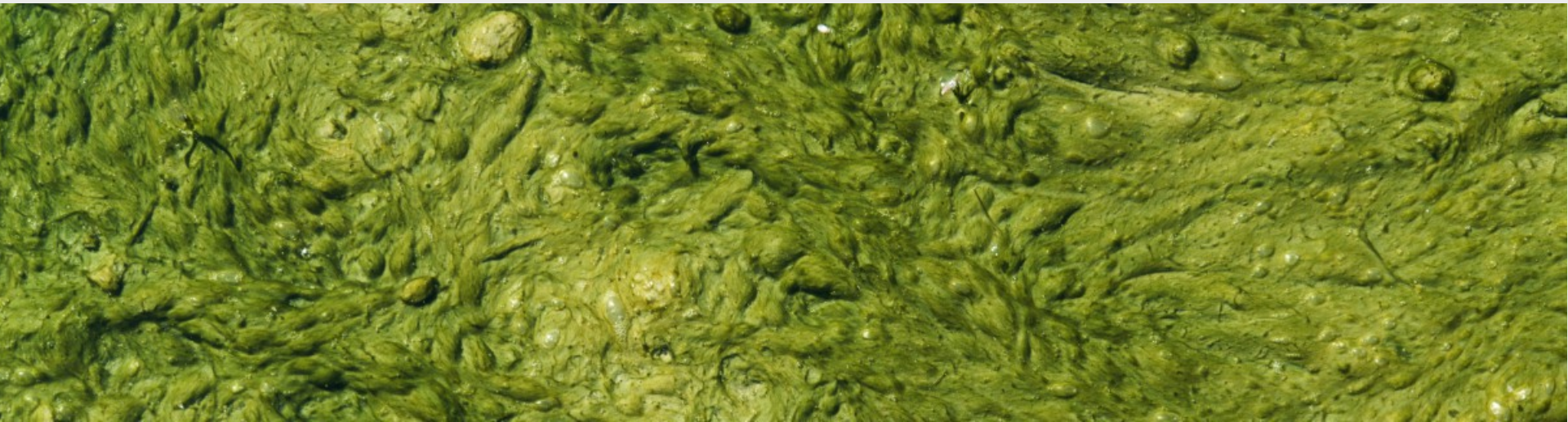
Computational Geosciences: large-scale basin modeling, inversion methods and data assimilation, seismic imaging, and highly scalable reservoir simulation, etc.

Cognitive Systems Powered By IBM Watson for smarter natural resource discovery

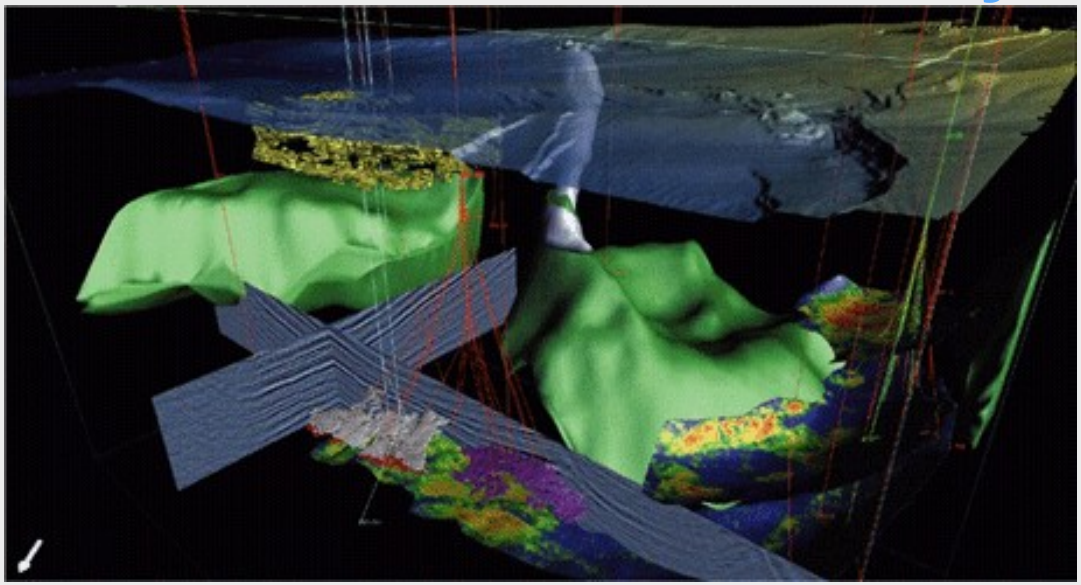
Integrated Operations & Logistics: stream computing applied to integrated operations, closed-loop optimization, condition-based maintenance, numerical optimization applied to Integrated Operations, offshore logistics optimization, etc.

Cognitive Systems Powered By IBM Watson for smarter natural resource discovery

Bio-fuels: Geographic Information Systems-based analytics and logistics.



Cognitive Systems Powered By IBM Watson for smarter natural resource discovery



Looking far beyond the eyes, under the deep sea: a spectacular image of some of the subsurface data available. In this picture, the bright colors represent subsalt oil and gas reservoirs.

IBM Watson Partnerships

The Power of Watson –
Big Partnerships & Innovation

Goldcorp/IBM Partnership Testimonial

IBM Using AI Tech to Boost Efficiency in Oil and Gas Sector

“IBM is one major player that’s stepped forward to offer its assistance. The company recently announced a four-year program that will see its Calgary-based Natural Resources Solutions Center (NRSC) partner with oil and gas firms. According to NRSC Director Tim Workman, the idea is to use artificial intelligence (AI) to work toward improvements in sustainability and operational efficiency.”

“IBM called on nearly two dozen of its clients last year to gauge their interest, and had 12 respond saying they wanted to participate. Since then, other companies have approached IBM about joining in. Plains Midstream Canada, Minestar Group and OpsMobil are among the firms that have signed on.”

– source: Investing News (full article link below)

https://investingnews.com/daily/resource-investing/energy-investing/oil-and-gas-investin
/

P IBM 19-1-23

Watson Visual Recognition Demo

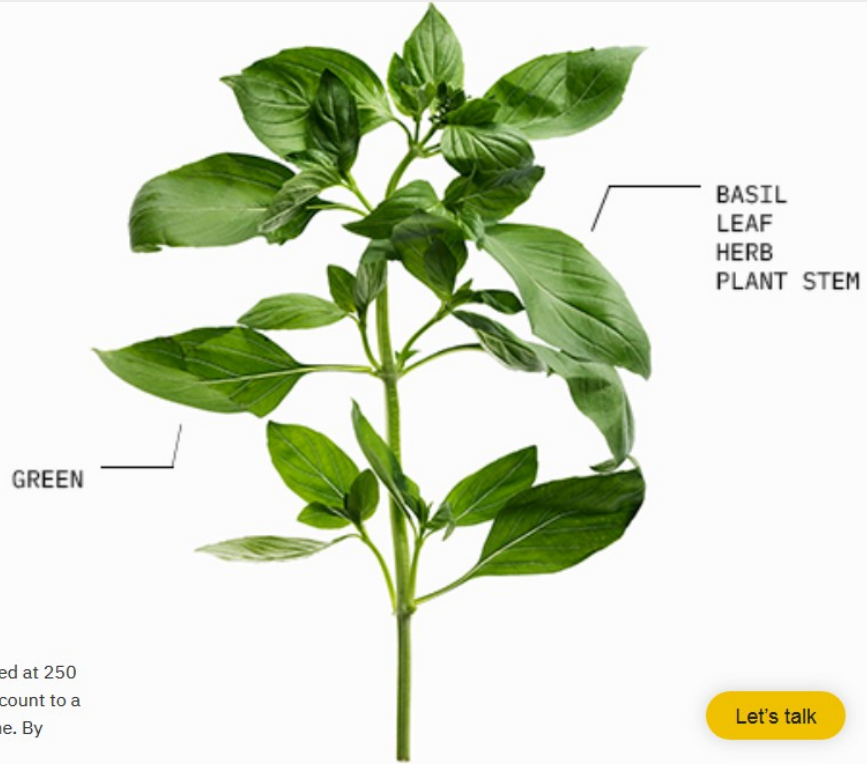
Visual Recognition

Quickly and accurately tag, classify and train visual content using machine learning.

Get started free

Already using Visual Recognition? Log in

To get started, you will create a Lite Plan (no charge) instance of the Visual Recognition service, which is capped at 250 Events per day. Your Lite plan instance will be deleted after 30 days of inactivity if you do not upgrade your account to a subscription plan. Details of subscription options are available here. You may upgrade your account at any time. By continuing, you agree to the Terms.



https://www.ibm.com/watson/services/visual-recognition/demo/

Thank you!

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