

# Gartner bewertet Software zur Datenanalyse

Figure 1. Magic Quadrant for Data Science and Machine Learning Platforms



Software und Plattformen für Unternehmen mit Fokus auf **Maschine Learning**, d.h. **prädiktive Analysen** zur Erstellung von **Prognosen**.

Beispiele:

- **Rapidminer**
- **IBM Watson**

# People Don't Trust AI--Here's How

On the other hand, if Watson generated a recommendation that contradicted the experts' opinion, doctors would typically conclude that it was simply too complex to be fully understood by humans. Consequently, this has caused even more mistrust and disbelief, leading many doctors to ignore the seemingly outlandish AI recommendations and stick to their own expertise.

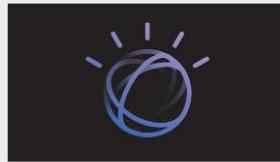
As a result, IBM Watson's premier medical partner, the MD Anderson Cancer Center, recently announced it was dropping the programme.

Similarly, a Danish hospital reportedly abandoned the AI

# IBM Watson heute?

## Moments from IBM's transformation

As our company has led clients on their digital journeys, IBM has also transformed itself—through acquisitions, breakthrough technologies and social innovations.



### IBM Watson

IBM Watson helped AI emerge from a long “winter” and is now deployed in customer service, healthcare, supply chain, weather forecasts, energy exploration and other fields—totaling more than 30,000 client engagements.



### P-TECH

Pathways in Technology Early College High Schools (P-TECH) is a new education model co-developed by IBM working together with educators, policymakers and elected officials.



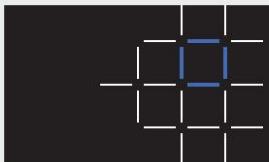
### IBM Cloud

IBM Cloud has grown to be a more than \$21 billion business offering enterprises public, private and hybrid cloud solutions. In 2019, IBM introduced the world's first financial services-ready public cloud, secure and purpose-built for the industry.



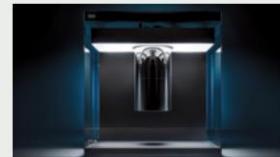
### IBM Security

IBM Security was built for industry-leading compliance, threat monitoring and container security. In 2019, Cloud Pak for Security was introduced to orchestrate tools across the entire security stack.



### IBM Blockchain

IBM Food Trust, TradeLens and other initiatives are streamlining supply chain processes and bringing trust and transparency to transactions.



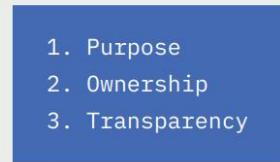
### IBM Q

A fundamentally different way of computing, quantum has the potential to transform business and solve some of the world's biggest problems. IBM has led in quantum research and development and now offers a fleet of 15 advanced quantum computers.



### IBM Garage

A comprehensive approach to innovation and transformation, the IBM Garage process brings designers and developers together with clients and stakeholders. The process helps create and scale new ideas and achieve business value.



### Principles for Trust & Transparency

For more than a century, IBM has earned the trust of clients and society. In 2018, we codified the core principles that guide everything we do, from handling client data to the responsible deployment of new technologies.



### Red Hat

One of the largest technology acquisitions in history combined the power and flexibility of Red Hat's open hybrid cloud technologies with the scale and depth of IBM's innovation and industry expertise.



### Strategic Divestitures

Over eight years, IBM has sold businesses with more than \$10 billion in revenue, including semiconductor manufacturing and x86 servers, in order to allocate capital to innovation.



### Business Roundtable

In 2019, IBM signed the Business Roundtable Statement on the Purpose of a Corporation. The Business Roundtable is a group that brings together the CEOs of nearly 200 American companies.

# 8 Machine Learning II

## - ML in Natural Language Processing (NLP)

### Content:

1. Motivation
2. IBM Watson
3. RNN & LSTM Networks
4. Transformer Models
5. Transformer BERT
6. Transformer GPT-3
7. Summary



# 8 Machine Learning II

- ML in Natural Language Processing (NLP)
- (2) IBM Watson Supercomputer





## 2. IBM Watson Supercomputer

## Watson (computer)

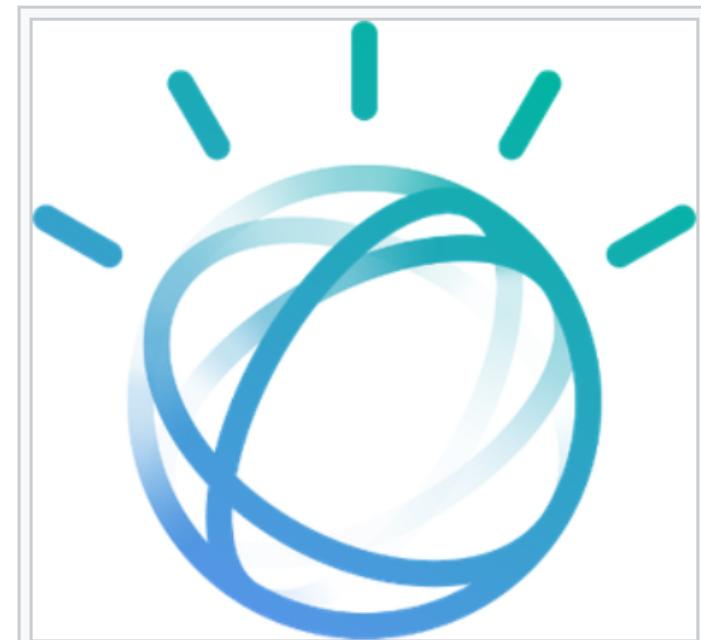


From Wikipedia, the free encyclopedia

"IBM Watson" redirects here. For the IBM laboratory, see [Thomas J. Watson Research Center](#).

**Watson** is a question answering computer system capable of answering questions posed in natural language,<sup>[2]</sup> developed in IBM's DeepQA project by a research team led by principal investigator David Ferrucci.<sup>[3]</sup> Watson was named after IBM's first CEO, industrialist Thomas J. Watson.<sup>[4][5]</sup> The computer system was specifically developed to answer questions on the quiz show *Jeopardy!*<sup>[6]</sup> and, in 2011, the Watson computer system competed on *Jeopardy!* against former winners Brad Rutter and Ken Jennings<sup>[4][7]</sup> winning the first place prize of \$1 million.<sup>[8]</sup>

Watson had access to 200 million pages of structured and



Watson's avatar, inspired by the IBM "smarter planet" logo<sup>[1]</sup>



Introduction

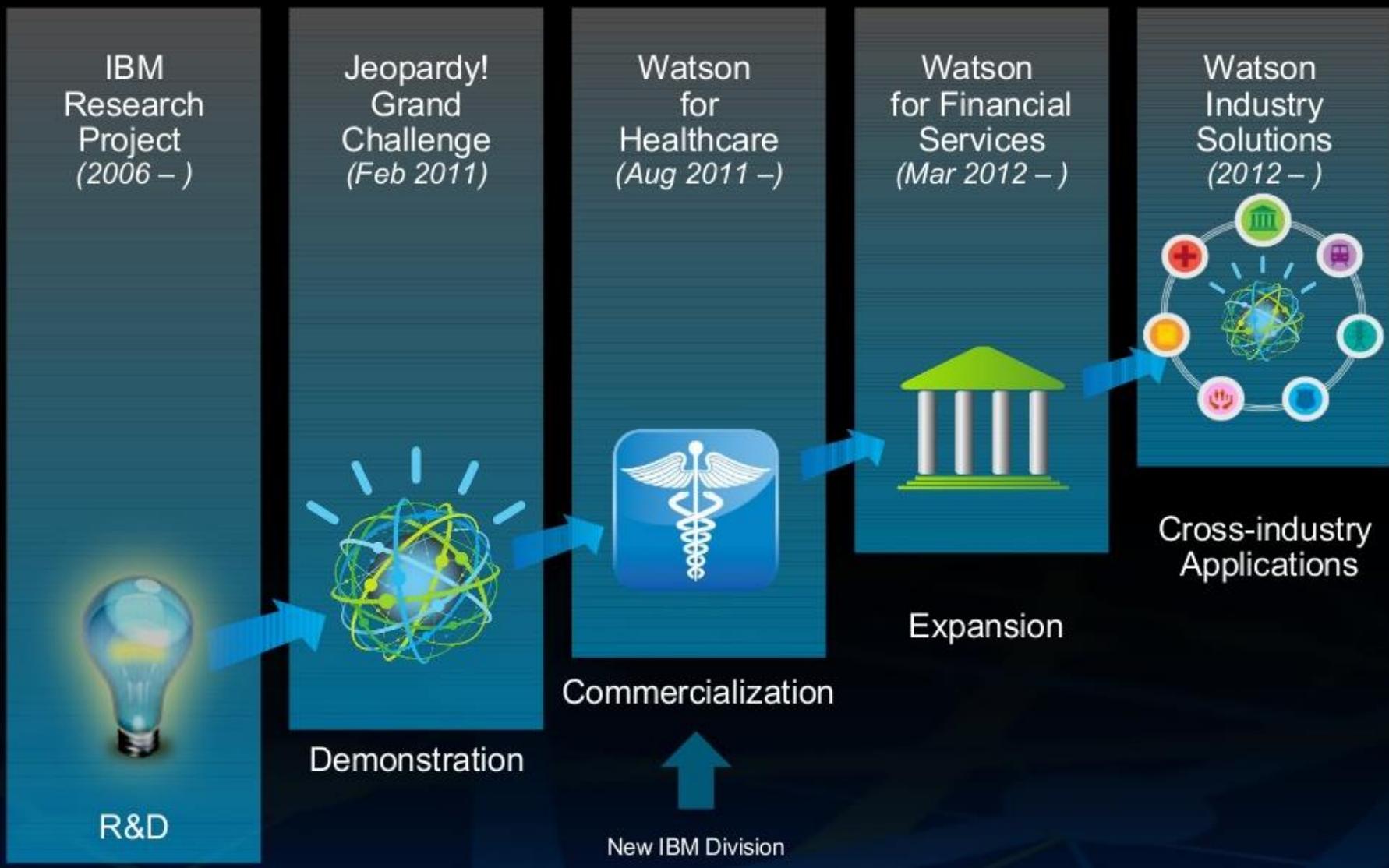
How Watson Answers a Question in Four Steps

00,000 ms

Actual Processing Time

**The first person mentioned by name  
in ‘The Man in the Iron Mask’  
is this hero of a previous book  
by the same author.**

# Brief History of IBM Watson



# Werbung zu IBM Watson (10/2016)



Annabelle +  
IBM Watson

# IBM Watson Supercomputer

Watson is an **IBM supercomputer** that combines **artificial intelligence (AI)** and sophisticated **analytical software** for performance as a “question answering” machine.

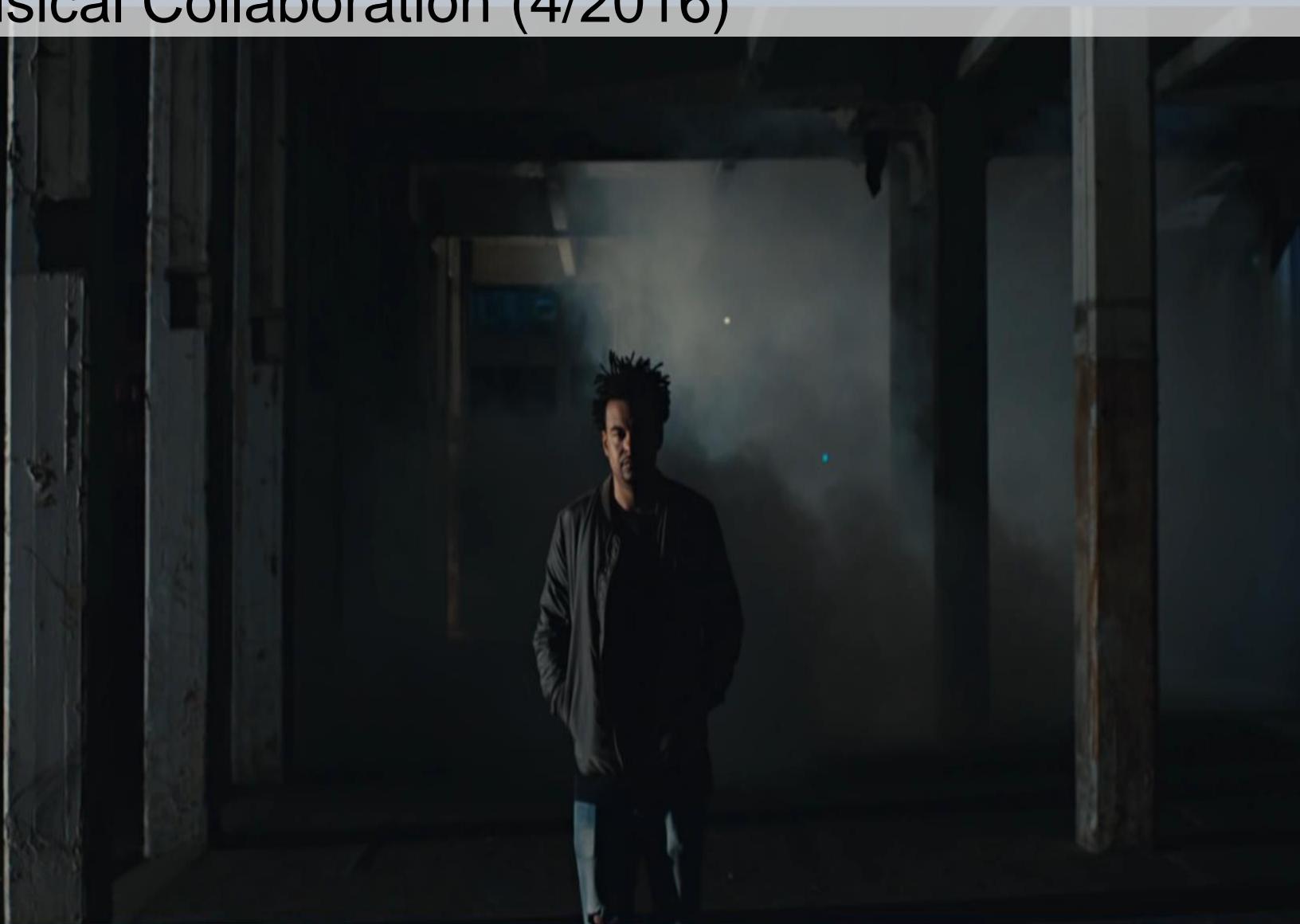
The Watson supercomputer processes at a **rate of 80 teraflops** (trillion floating-point operations per second). Watson accesses **90 servers** with a combined **data store of over 200 million pages of information**, which it processes against **six million logic rules**.

The device and its data are **self-contained** in a **space** that could accommodate **10 refrigerators**.

**Watson's key components include:**

- **Apache UIMA** (Unstructured Information Management Architecture) frameworks, infrastructure and other elements required for the **analysis of unstructured data**.
- **Apache's Hadoop**, a free, Java-based programming framework that supports the **processing of large data sets in a distributed computing environment**.
- **SUSE Enterprise Linux Server 11**, the fastest available **Power7 processor operating system**.
- **2,880 processor cores**.
- **15 terabytes of RAM**.
- **500 gigabytes of preprocessed information**.
- **IBM's DeepQA software**, which is designed for information retrieval that incorporates **natural language processing and machine learning**.

# Alex Da Kid + IBM Watson: A Musical Collaboration (4/2016)



# Michael Amberg

## Todays Content:

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- 2. IBM Watson**
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