What is AI?

Artificial intelligence (AI) is the intelligence exhibited by machines or software.
Deep Blue beat G. Kasparov in 1997
In 2011, Watson competed on Jeopardy! against former winners Brad Rutter and Ken Jennings. Watson received the first place prize of $1 million.
Cognitive System

Next Level Data Visualization
Automation + Interactivity
User characteristics / Dataviz point of view:

- Person
  - Visualization expert or NOT
  - Domain expert or NOT
  - Motivation
  - Age/Sex

- Familiarity with statistic
- Familiarity with graph/charts
- Cognitive style
- Personality
Target Groups or Customer Segments: mental model, lifestyle model, values, behavior...
Sentiment and Emotion application uses text analytics to detect sentiment and emotions from people's digital footprints (e.g., online reviews and social media text). The application can offer positive or negative sentiment and emotions of "anger", "disgust", "sadness", "fear" and "joy".

Output

This demo shows the sentiment and emotion patterns in your text sample. The y-axis indicates the level of sentiment (how positive and negative) and the color bands show the overall patterns of the emotion changes section by section in the input text (each text piece is separated by a new line). Each bar shows the composition of emotions for a specific section of text.

because I wanted to make sure they had some healthy stuff on the menu. Turns out I had NOTHING to be worried about, because 75% of the menu is healthy and delicious! I ordered the salmon with broccoli and greenbeans. Great portions :) the service was awesome too, as our waiter was very kind and gave great recommendations. Will be back again!

I wish I could give Westville East a better rating because I really liked my experience at the west village location, but
This service enables people to discover and understand, and revise the impact of tone in their content. It uses linguistic analysis to detect and interpret emotional, social, and language cues found in text.
DEMO - Sentiment and Emotion

Text to Speech

The Text to Speech service understands text and natural language to generate synthesized audio output complete with appropriate cadence and intonation. It is available in 13 voices across 7 languages. Select voices now offer Expressive Synthesis.

Resources:
- API Reference
- Documentation
- Fork and Deploy on Bluemix
- Fork on Github

Input Text

The text language must match the selected voice language. Mixing language (English text with a Spanish male voice) does not produce valid results. The synthesized audio is streamed to the client as it is being produced, using the HTTP chunked encoding. The audio is returned in the Ogg Opus format which can be played using VLC and Audacity players.

American English (en-US): Allison (female, expressive)
American English (en-US): Allison (female, expressive)
American English (en-US): Michael (male)
American English (en-US): Lisa (female)
British English (en-GB): Kate (female)
French (fr-FR): Renee (female)
German (de-DE): Birgit (female)
German (de-DE): Dieter (male)
Italian (it-IT): Francesca (female)
Japanese (ja-JP): Emi (female)
Brazilian Portuguese (pt-BR): Isabela (female)
Castilian Spanish (es-ES): Enrique (male)
Castilian Spanish (es-ES): Laura (female)

Would you like to help make this service better?
- Allow Watson to learn from this session
- Opt out

I am sorry to inform you that the items you requested are back-in-stock now when those items will become available. Maybe next week but a happy customer, management has decided to give you a 50%
From Data to Visualization:

Big Data
- Numbers
- Text
- Sounds
- Images
- Videos

Machine
  Automated Machine Perception

Semantic content based filters
  Near human level perception

Mission / Task
  Mission relevant content

Visualization
  Mission focused analysis

Big Value
- Value for customers,
- scientific community,
- and IBM

Cognitive Visualization Lab – Data Visualization & Machine Learning
Evaluate the User Engagement in front the data visualization:

- **Expose Viewing**: The user knows how to read data points.
- **Involve Interacting**: The user interacts with the visualization and manipulate the data.
- **Analyze Finding Trends**: The user analyze the data, finds trends, and outliers, etc.
- **Synthesize Testing Hypotheses**: The user is able to form and evaluate hypotheses.
- **Decide Deriving Decisions**: The user is able to draw final decisions based on evaluations of different hypotheses.

Towards a Taxonomy for Evaluating User Engagement in Information Visualization, Narges Mahyar, Sung-Hee Kim, Bum Chul Kwon
On 271028Z MAR 09, TF Kodiak (RCP 7) was directed by the AHA to a suspected IED site at coordinates NC 9358 0147, approximately 12.09 km N of FOB SARENO. The IED consisted of a battery pack and a Pakistan mine. EOD conducted a controlled detonation on site and RCP continued mission.

Summary from duplicate report AT 261445Z Mar 09, Sabari ANP reported they were securing a possible IED on Route Torch, North of the Khabbat Bazaar. On 27 Mar 09, RCP stopped at the Sabari DC to gather an escort to the IED site and moved to that location. ANP pointed out to us the location in the road they saw the wire. The RG-31 w/ arm moved forward to begin interrogation and found the wire at NC 9223 068063. EOD was called forth with their robot and a thorough investigation of the site was begun. EOD found a command pull wire that ran toward the East side of the road and ran into a culvert that ran under the road. They were able to secure the main charge (Pakistani P3 MK1 plastic AT mine), 2L bottle of fuel, battery pack and command pull line. EOD destroyed the main charge off to the side of the road and we continued mission. IED consisted of 1 x Pakistani P3 MK1 plastic AT mine, battery pack consisting of at least 6 x D or C cell batteries, 1 x 5L bottle of fuel and command pull wire. Insurgents used a culvert to conceal the IED and used command pull as the initiation device. ANP were able to thwart their plans in detonating this IED. HTR EVENT CLOSED.

Endless War - YoHa with Matthew Fuller (2012)
What is DataViz?

Data visualization is both an art and a science.
Unexpected but evocative. Scientific but visually pleasant.
Smart City
The city is emitting large volumes of diverse data

• Volume
  • Bus gps (1000 buses)
  • Loop (4000 sensors)

• Variety
  • Counts vs mobile
  • Sensor vs video vs test
  • Different spatial resolution

Data is continuously changing

• Velocity
  • Bus gps (3000 meas/min)
  • Loop (20000 meas/min)
USER INTERACTS (I) with the VISUALIZATION to update MODEL.
unstructured data

News Explorer

http://news-explorer.mybluemix.net/
unstructured data

Video Explorer

http://watson.ted.com/
Ask Watson a question

Ask Watson a question to see if anyone has tried to answer it in their TED Talks.

Type your question

Suggested format: How does money relate to happiness?

How does Watson do it?

Watson uses its understanding of human language to comprehend all of the TED talks. It then identifies sections that may address your question or talks that contain concepts that you may find interesting based on your own writing and personality.

WE WANT YOUR FEEDBACK
Exhibition

Charting Culture

http://www.nature.com/news/1.15650
Humanity’s cultural history captured in 5-minute film
Video map of births and deaths shows rise and fall of cultural centres.

Public health: A sustainable plan for China’s drinking water
Tackling pollution and using different grades of water for different tasks is more efficient than making all water potable, say Tie Tao and Kunlun Xin.

Diversity: Energy studies need social science
A broader pool of expertise is needed to understand how human behaviour affects energy demand and the uptake of technologies, says Benjamin K. Sovacool.

Access the Insight online
LIPIDS IN HEALTH AND DISEASE

Science jobs from naturejobs
Hair Appraisal and Measurement Senior Specialist
Unilever

A new tool for analyzing cultural mobility
Science reports that birth and death locations of distinguished individuals provides insights into cultural mobility. See this week’s issue.

NASA’s Mars 2020 rover to feature lean, nimble science payload
Rover will have to work quickly to assemble cache of rock samples

Science’s 2020 Mars rover

A fragment of rock, collected by a sample of Martian soil, provides a glimpse into the planet’s past.

LIPIDS IN HEALTH AND DISEASE

A network framework of cultural history
Sustained miniaturization and anatomical innovation in the dinosaurian ancestors of birds

Mysterious Siberian crater attributed to methane
Build-up and release of gas from thawing permafrost most probable explanation, says Russian team.

Humanity’s cultural history captured in 5-minute film
Video map of births and deaths shows rise and fall of cultural centres.

Quantum bounce could make black holes explode
Nature | 17 Jul 2014

HIV community reels from losses in MH17 plane tragedy
Nature | 18 Jul 2014

Plasma physics: The fusion upstarts
Nature | 23 Jul 2014

Cancer treatment clears two Australian patients of HIV
Nature | 18 Jul 2014

China plans super collider
Nature | 22 Jul 2014
Exhibition
Network Earth

https://www.youtube.com/watch?v=xZ3OmIbtaMU