

# What is Cognitive - Basics

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Jan Sehnal

Head of Innovations

EG IT Int



# Cognitive

Understand

Reason

Learn

and Interact

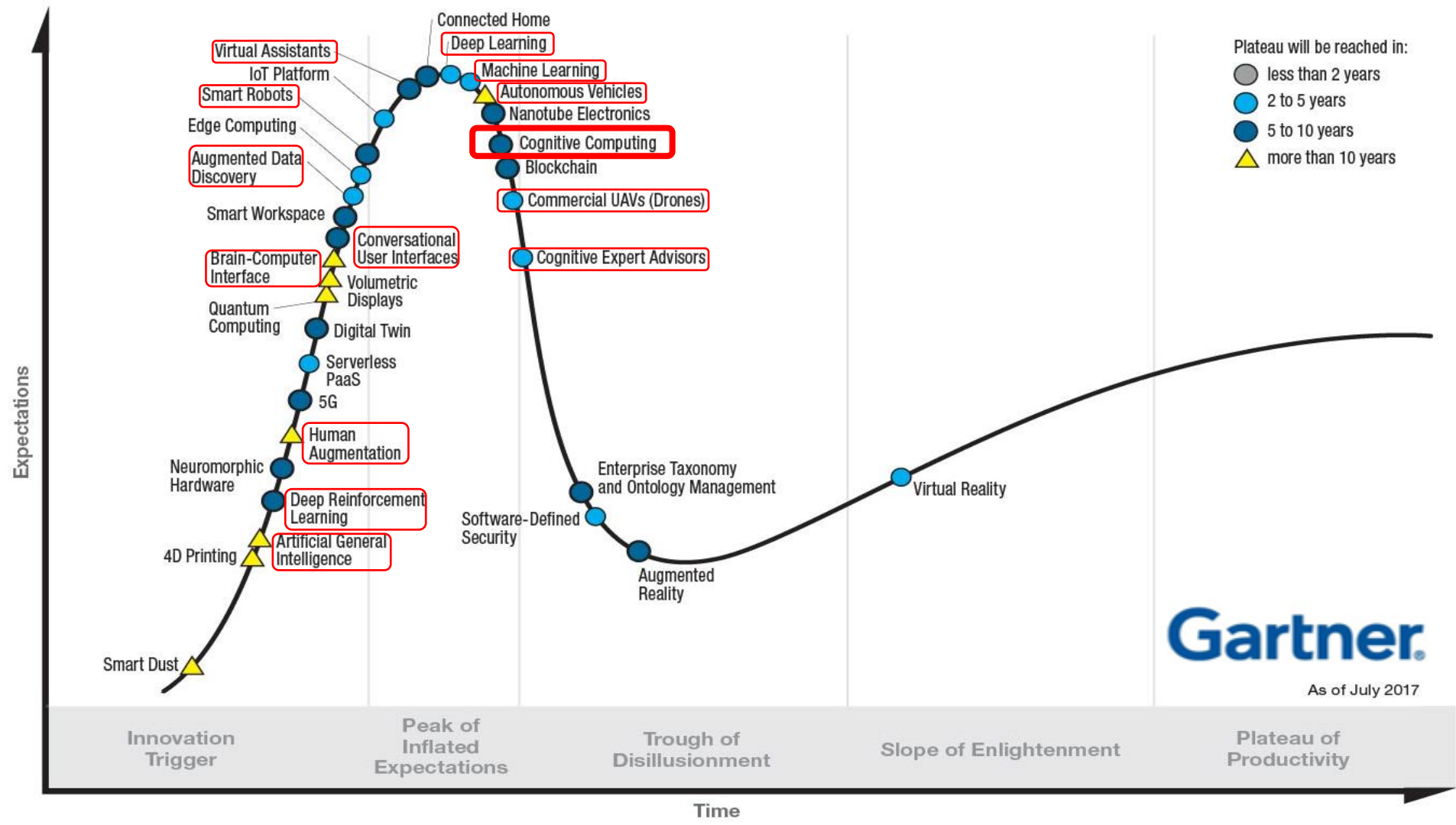


# Cognitive

Machine Learning

Deep Learning

Artificial Intelligence





# Overlearning



# Overlearning

„Real case“ – Twitter

AI creates own language – every time!

People are full of mistakes... – GO



**THIS GIRL IS ON FIRE!**

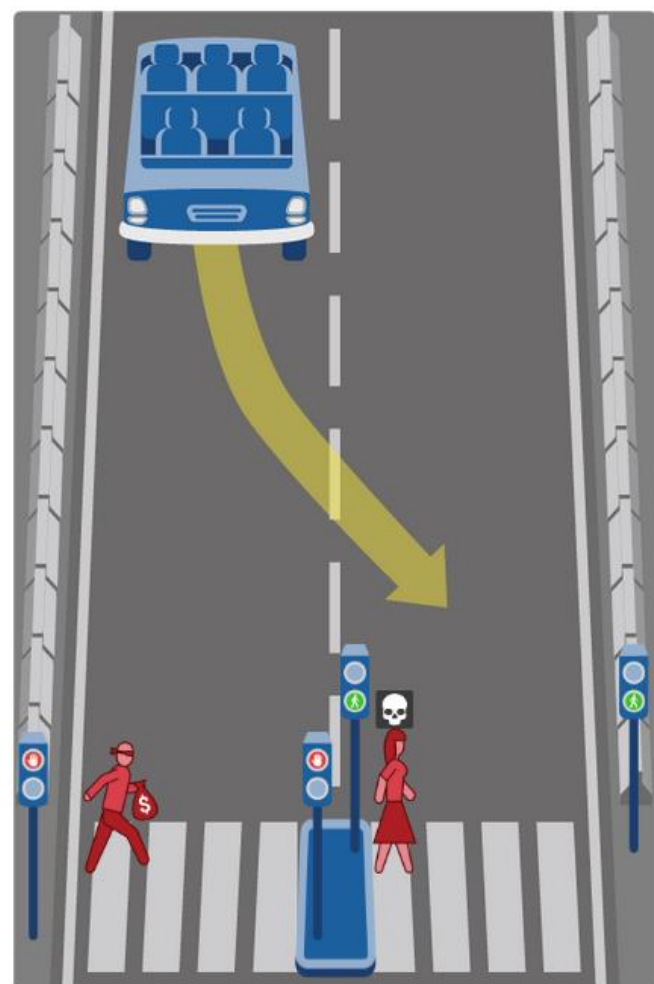
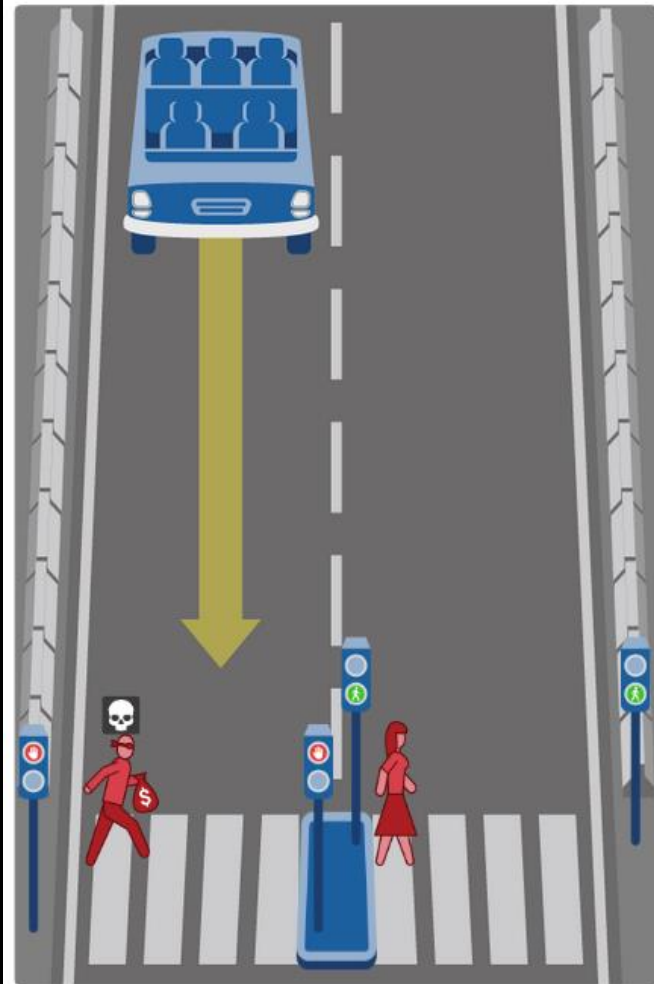


**GOOD. LET HER BURN.**



# Moral dilemma

What should the self-driving car do?



# Cause and consequence



# Context

„When was the last time I saw Paris?“

Hypothesis  
(few only)

Traveler

Boyfriend

Father

Pilot

You are 65 >

You are afraid of flying > ~~Pilot~~, (Traveler?)

Your surname is Hilton > Father, (Traveler?)

Mom (“role”) is asking > Father



# Context

Historical data:

**Jan** works in **EGIT** since **2018**.

**He** is covering **Innovation** topics in **ERSTE**.

Entities:

- Name, Employee, Person = **Jan**
- Work since = **2018**
- Duration = **3 months**
- Company, Employer = **EGIT/ERSTE**
- Topic, area, technology = **Innovation**
- Activity = **daily job/work/covering**

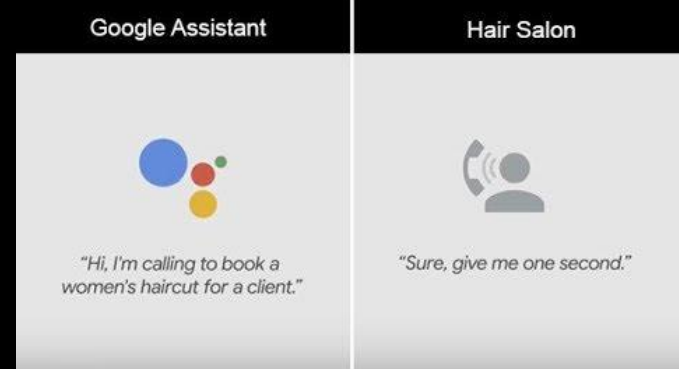
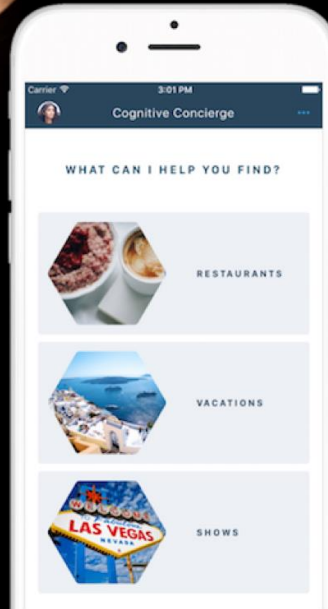
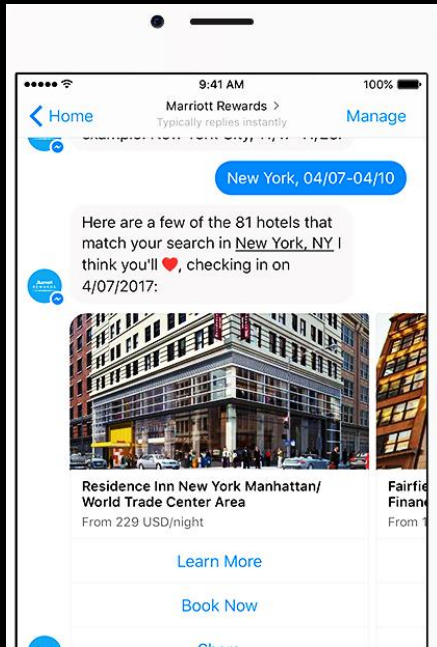
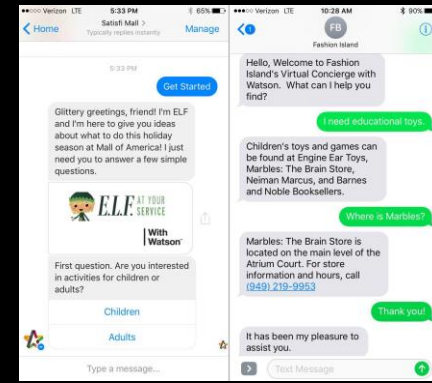


Question:

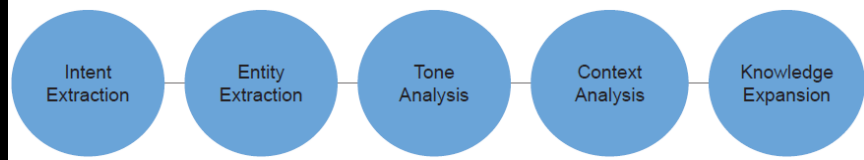
**“Who can help internally with the innovations?”**

# Využitie / Use cases

## Chatbots, Voicebots



# Využitie / Use cases



## Chatbots, Voicebots

1

Most of the time, customers have same requests, so the **intent** is the same

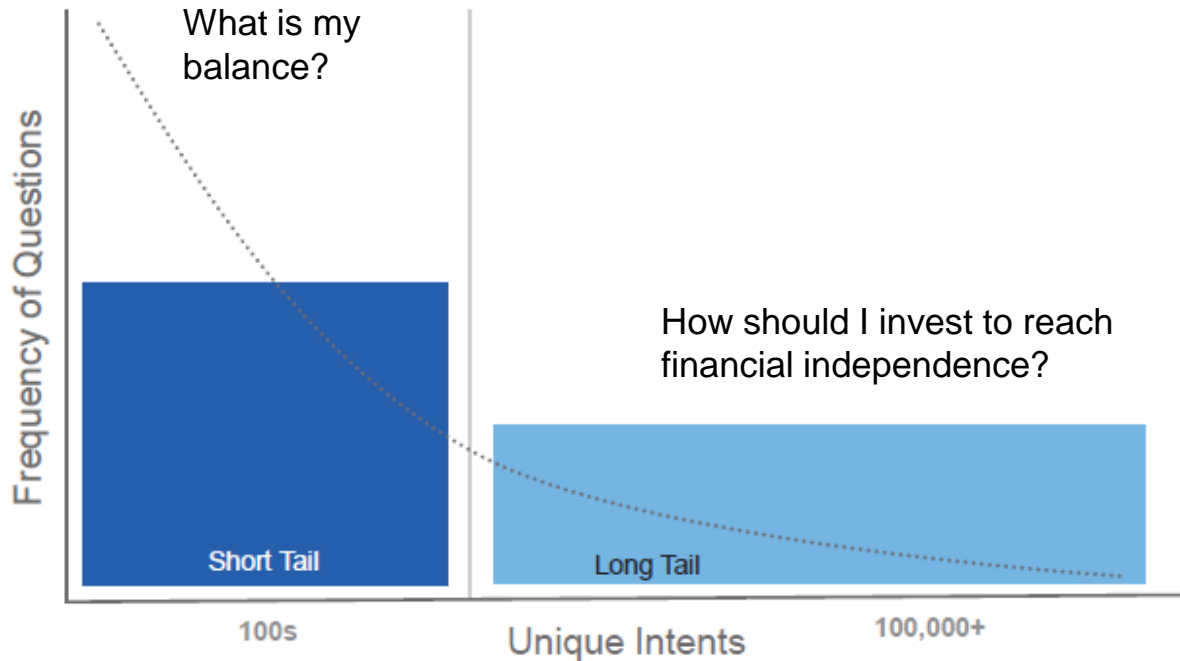
2

The way that customers ask the same **question** can be very **variable**

3

You need to read hundreds millions words to **better understand** these question variations

### Question distribution



# Využitie / Use cases

Chatbots, Voicebots

AI is not for  
Enterprises  
(yet)

1

Entities

- Vocabulary
  - Semantics
  - Expressions
- „Extraction“

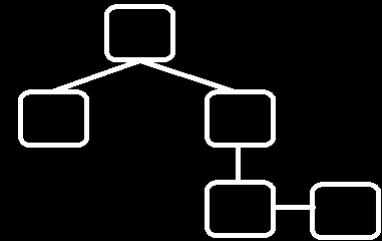
2

Intents

„What“

3

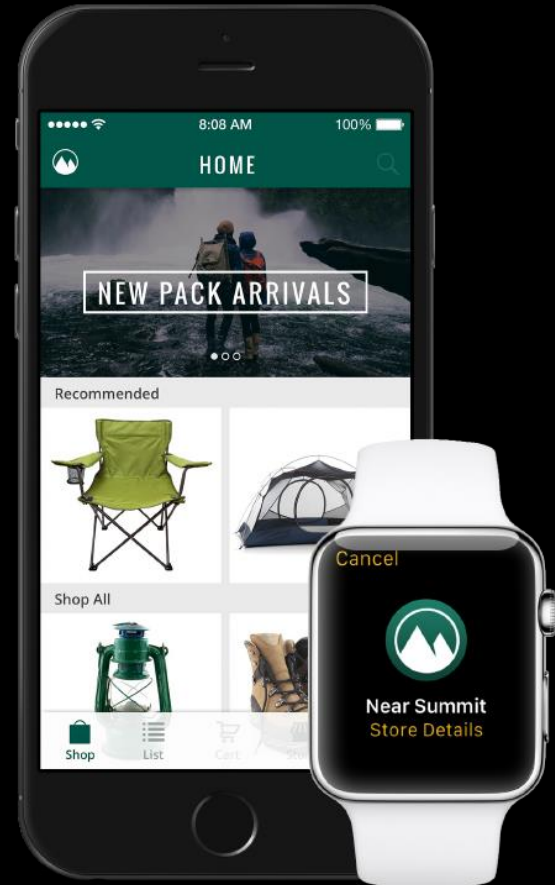
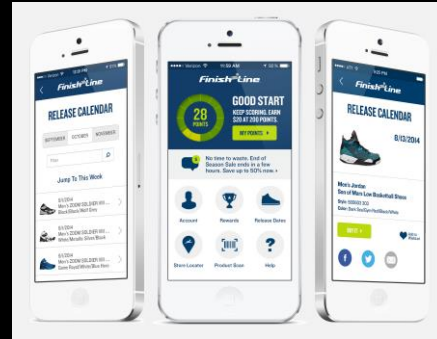
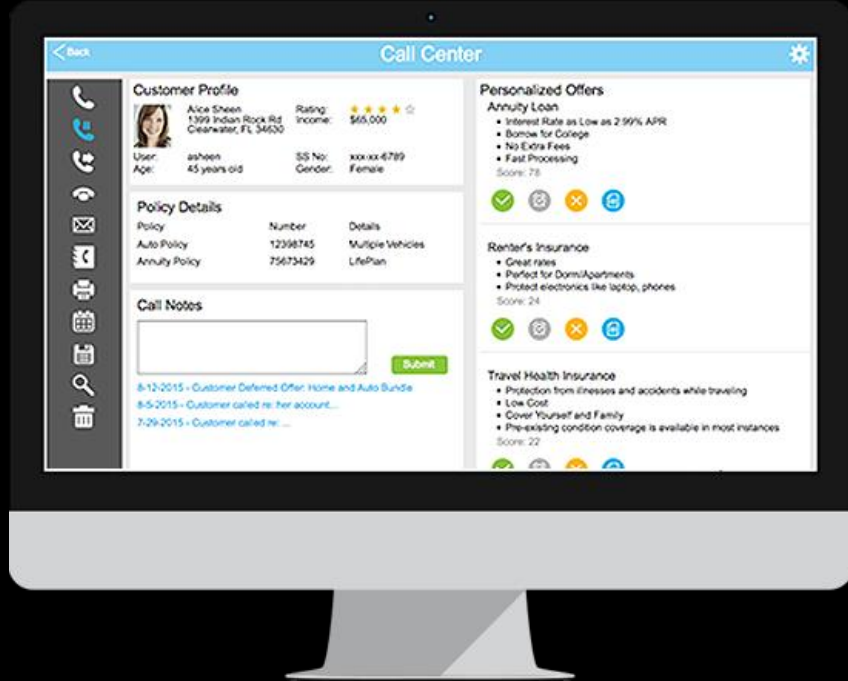
Conversation Tree



# Využitie / Use cases

Chatbots, Voicebots

Predictive customer intelligence



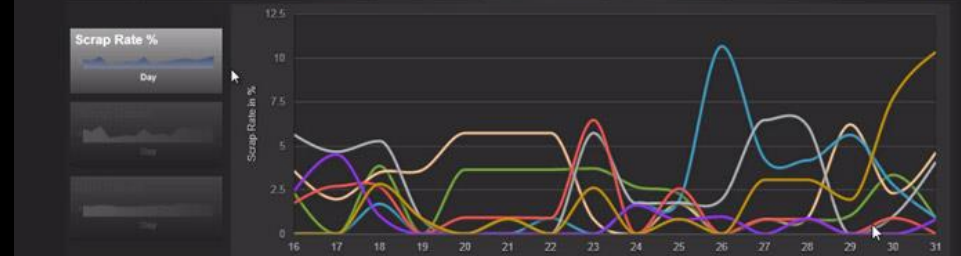
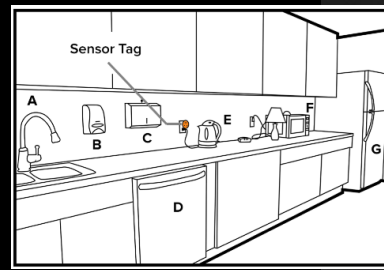


# Využitie / Use cases

Chatbots, Voicebots

Predictive customer intelligence

Predictive maintenance (image, sound, ...)



# Image Classification with AI Vision

I'm Aethopyga



I'm Pycnonotus

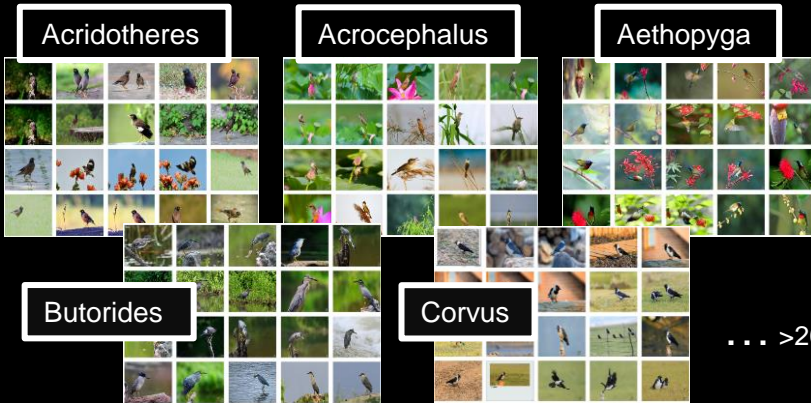


Result on public cloud API :  
white, red, yellow and teal bird



Result on public cloud API :  
white and black short beak bird

## User defines categories in AI Vision



Aethopyga: 0.90708



Pycnonotus: 0.99988

# Využitie / Use cases

Chatbots, Voicebots

Predictive customer intelligence

Video analytics – Attendance, shopping and Work safety

Dwell Time - Over 5 minutes : 1 since 10:01:33 AM  
Dwell Time - 1 to 5 minutes : 5 since 10:01:33 AM  
Dwell Time - 1 minute or less : 17 since 10:01:33 AM  
Enter Store : 96 since 10:01:33 AM



John, 8:11, 8:47

# Využitie / Use cases

Chatbots, Voicebots

Predictive customer intelligence

Video manipulation – Porn, Politics, ... Reality



Speech

Our Result



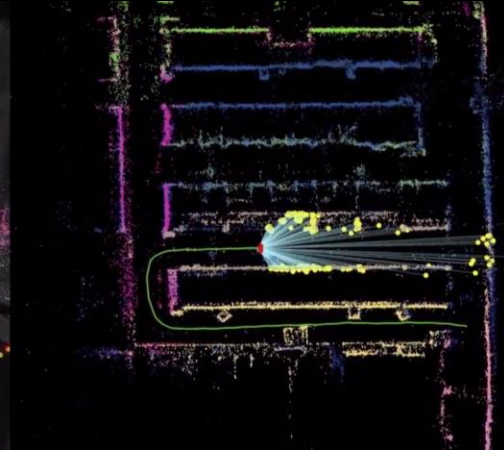
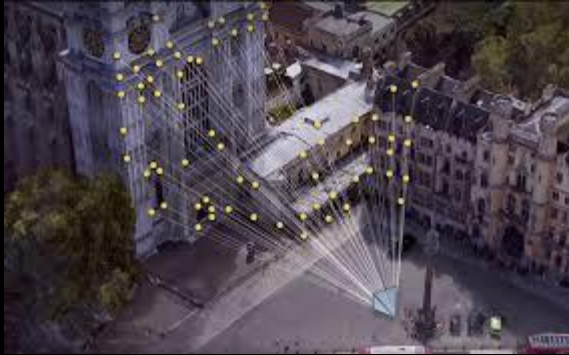
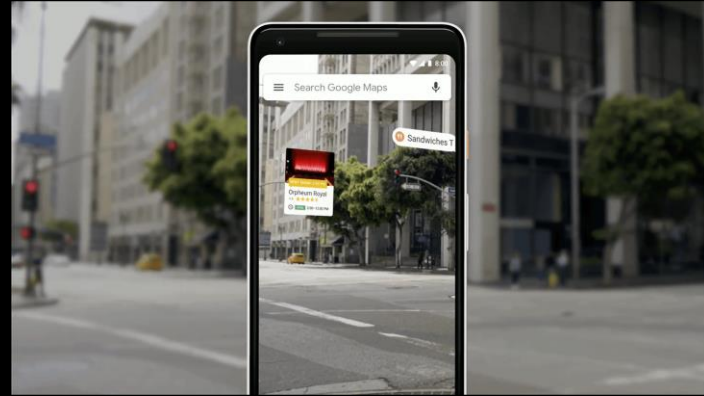
# Využitie / Use cases

Chatbots, Voicebots

Predictive customer intelligence

Video analytics

Augmented reality + VPS



# Využitie / Use cases

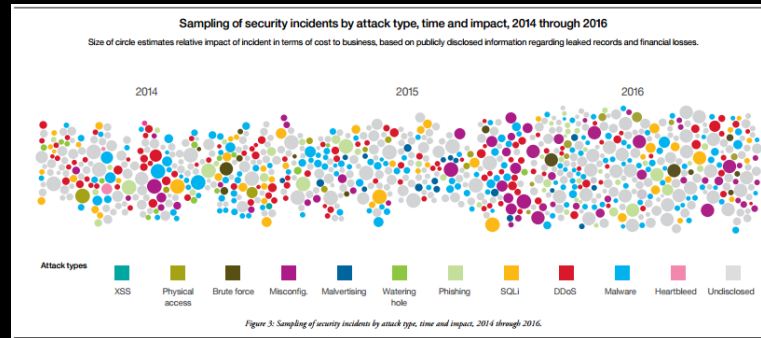
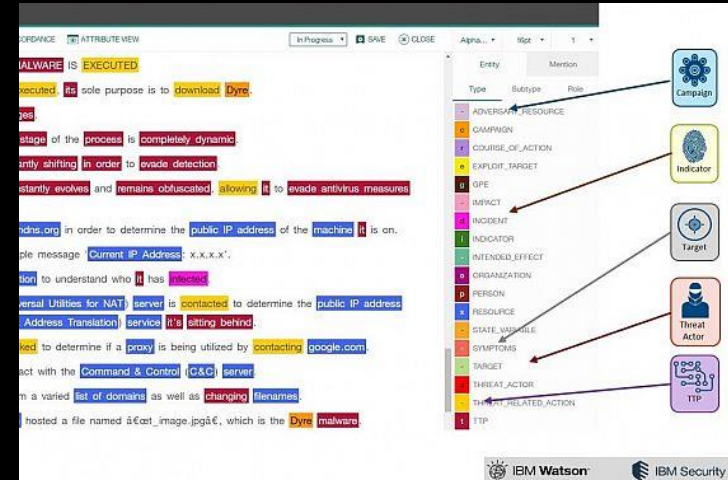
Chatbots, Voicebots

Predictive customer intelligence

Video analytics

Augmented reality

Cybersecurity



*Petya and  
WannaCry attacks*

# Využitie / Use cases

Chatbots, Voicebots

Predictive customer intelligence

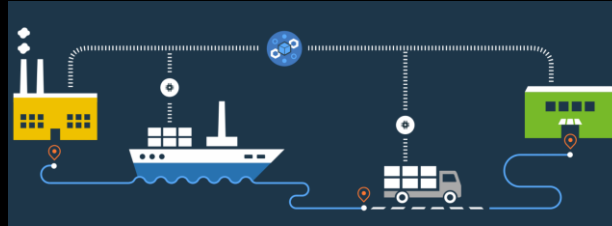
Video analytics

Augmented reality

Cybersecurity

Supply chain optimization

(using also **Blockchain and IoT**)



# Využitie / Use cases

Chatbots, Voicebots

Predictive customer intelligence

Video analytics

Augmented reality

Cybersecurity

Supply chain optimization

Self-driving cars





# Využitie / Use cases

Chatbots, Voicebots

Predictive customer intelligence

Video analytics

Augmented reality

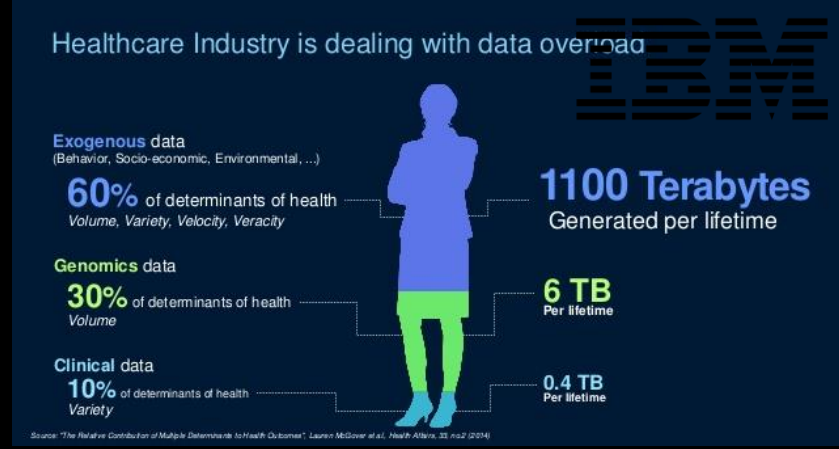
Cybersecurity

Supply chain optimization

Self-driving cars

## Healthcare

Genomics, Oncology



# Thank you

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Video o samoučení sa pohybu

<https://www.facebook.com/367116489976035/posts/2696068847080776/>

Video analytika prichodu na recepciu

<https://www.linkedin.com/feed/update/urn:li:ugcPost:6501703651264991232>

Rychlejšia umela inteligencia

<https://www.linkedin.com/feed/update/urn:li:ugcPost:6498705225384280064>

Video detekcia typu napoja

<https://www.linkedin.com/feed/update/urn:li:ugcPost:6496499382169399296>

Deep fake video vymenenia osoby

<https://www.linkedin.com/feed/update/urn:li:ugcPost:6490189218579603456>

Detekcia jedla <https://www.linkedin.com/feed/update/urn:li:ugcPost:6491953797747830784>

Zmena typu auta do videa <https://www.linkedin.com/feed/update/urn:li:ugcPost:6490037680313765888>

Trening aut vo virtualnom prostredí

<https://www.linkedin.com/feed/update/urn:li:ugcPost:6486899439196823552>

Virtualne mesto, napríklad pre hry

<https://www.linkedin.com/feed/update/urn:li:ugcPost:648466685797298176>

Simulator autíciiek-deep learning <https://m.youtube.com/watch?v=Aut32pR5PQA>