

8º Summit de Transformación Digital 2018

COLOMBIA EN LAS CADENAS GLOBALES DE VALOR

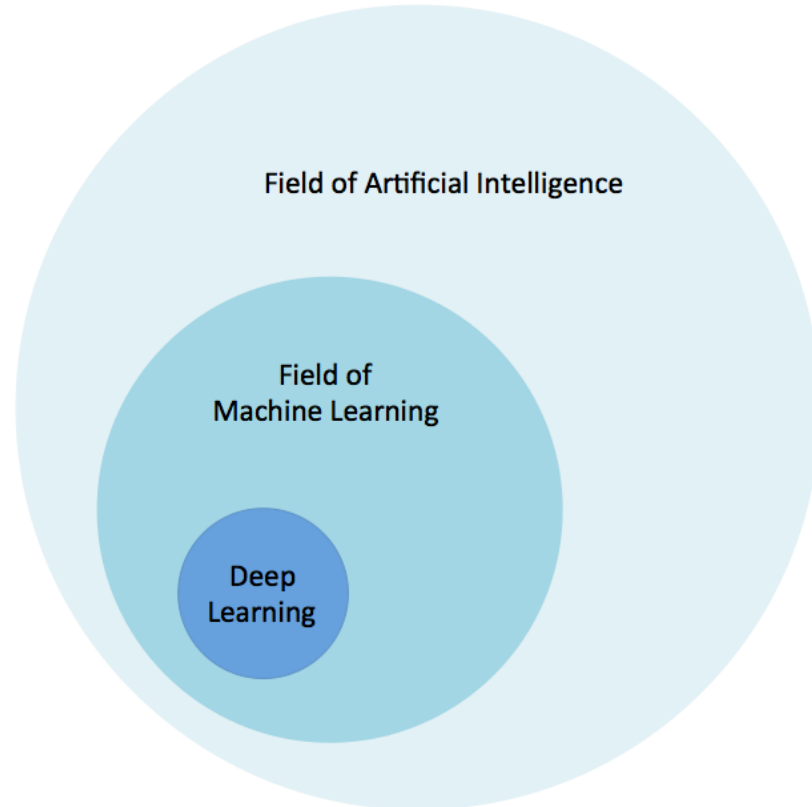
Suraj Shinde

Inteligencia Artificial
aplicada a la Industria

May 31th - Medellín,
Colombia

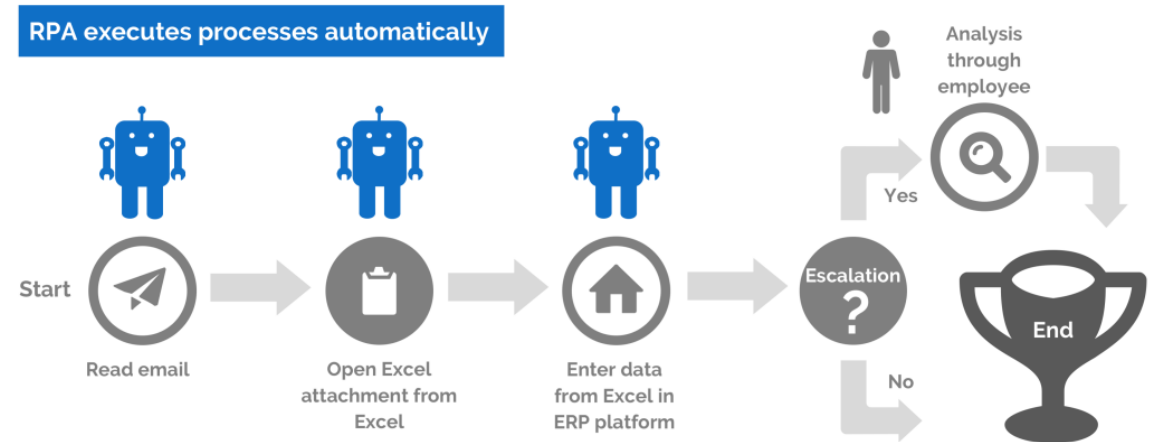
Artificial Intelligence Overview

Field of AI:



Machine Learning is about training algorithms to build models to classify or predict based on patterns learned from the data.

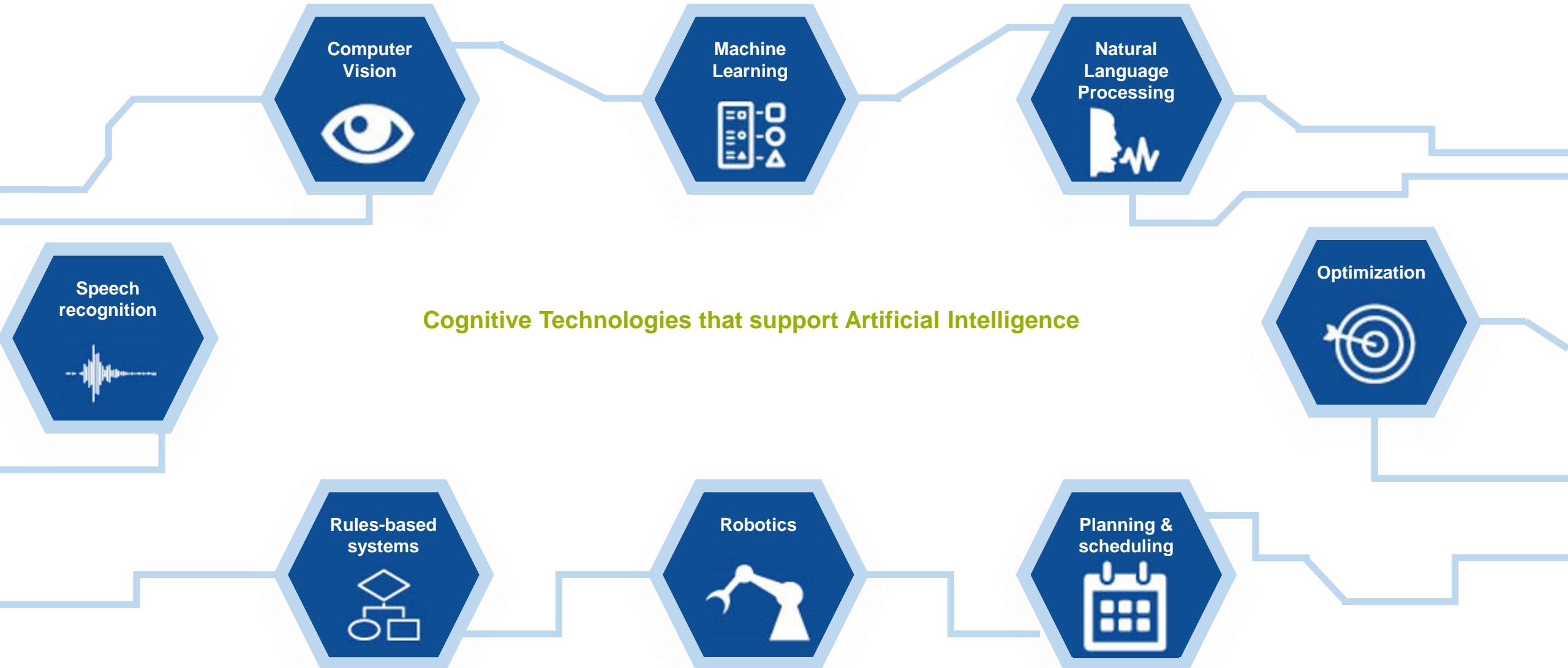
Deep Learning is machine learning using neural networks which are loosely inspired by the human brain.



Robotic process automation (or RPA) is a form of clerical process automation technology based on the notion of software robots that replicate the actions of a human being interacting with the user interface of a computer system.

Intelligent Process Automation (IPA) refers to the application of Artificial Intelligence and related new technologies, including Computer Vision, Cognitive automation and Machine Learning to Robotic Process Automation.

Artificial Intelligence Overview



Cognitive Technologies that support Artificial Intelligence

Artificial Intelligence Overview



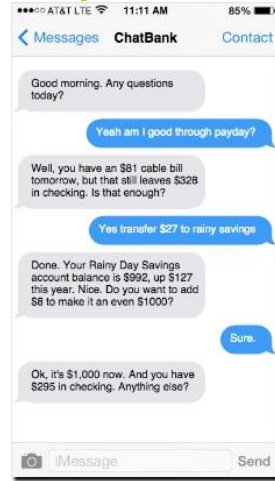
an NTT DATA Company

Portfolio Approach to AI Projects:

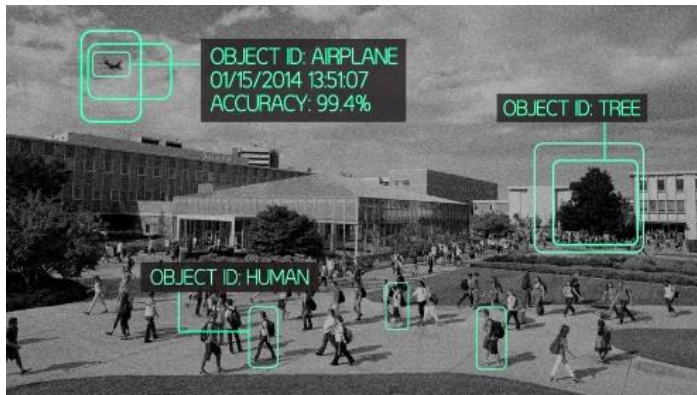
“Quick Wins: Touchpoint Optimization” “Long Term: Intelligent Process Automati



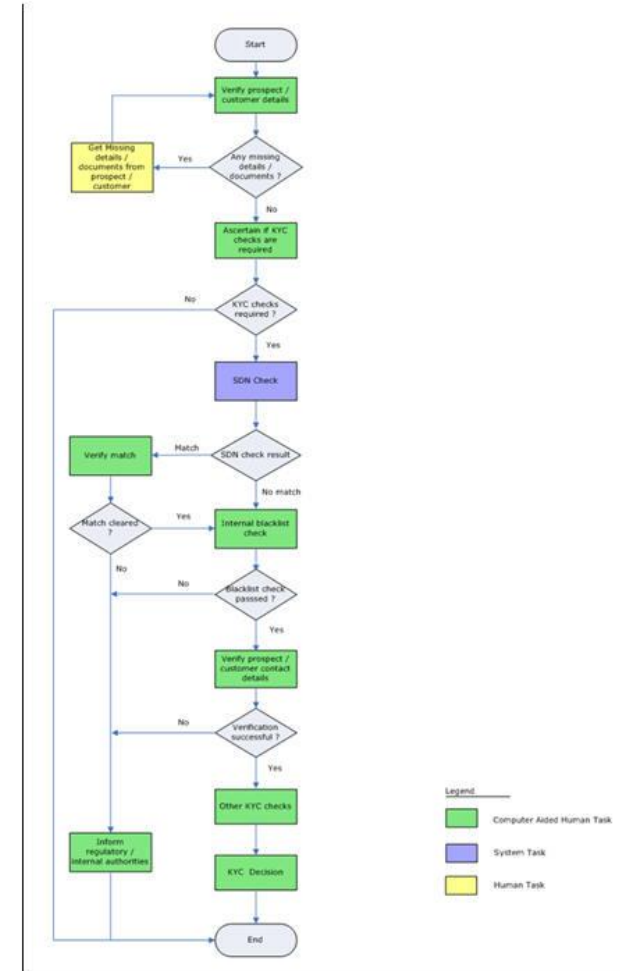
Speech



NLP



Vision



Taking advantage of AI

Momentum

Challenges

AI Answers

**Digital
Transformation**



Win new customers
Improve customer satisfaction
Scale the business without
scaling costs
Create new business models



Virtual assistant
Next best action
Sentiment analysis
Automated decisions
Predictive maintenance
...
Natural Language Processing
Speech recognition
Computer vision
Search & Optimization
Deep learning
...

Scaling business

Virtual assistant

Challenge

New customer segments

New ways of communicating

Increasing operating costs

Impact

Conv. & Trans.

90% assertiveness

Multi-channel

Fully monitored

Approach

IBM Watson

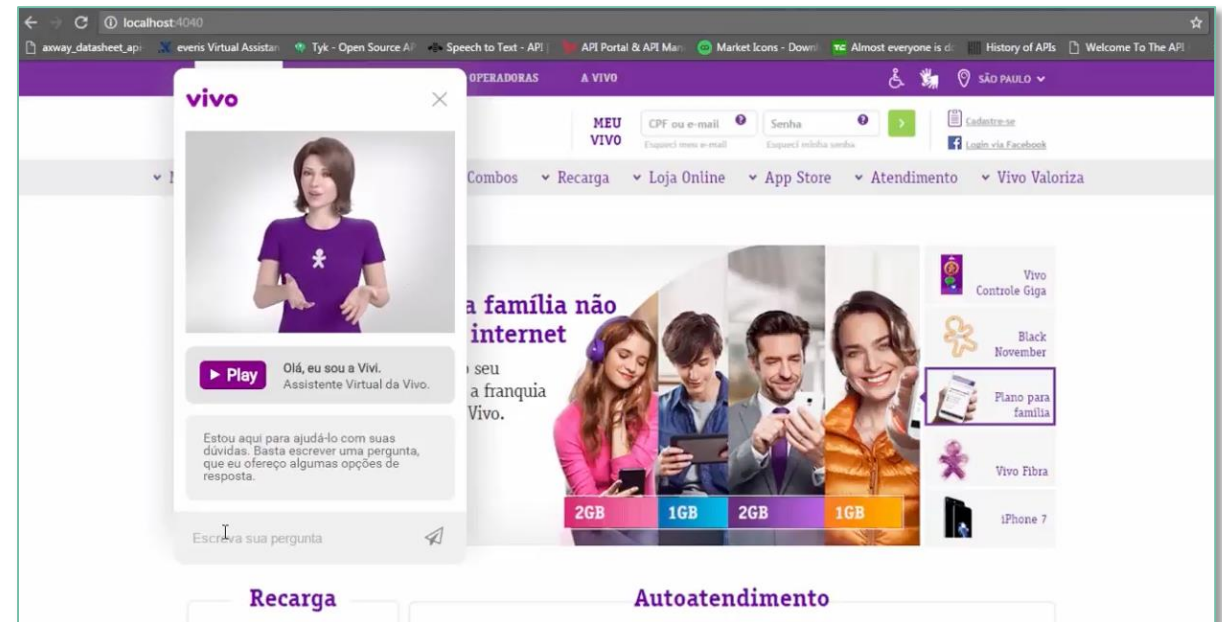
IBM Bluemix

Qlik

Content Manager

everis Virtual Assistant (eVA)

> 1M monthly sessions



Automating business

Virtual assistant

Challenge

Outdated self-service channels

Need to improve customer experience

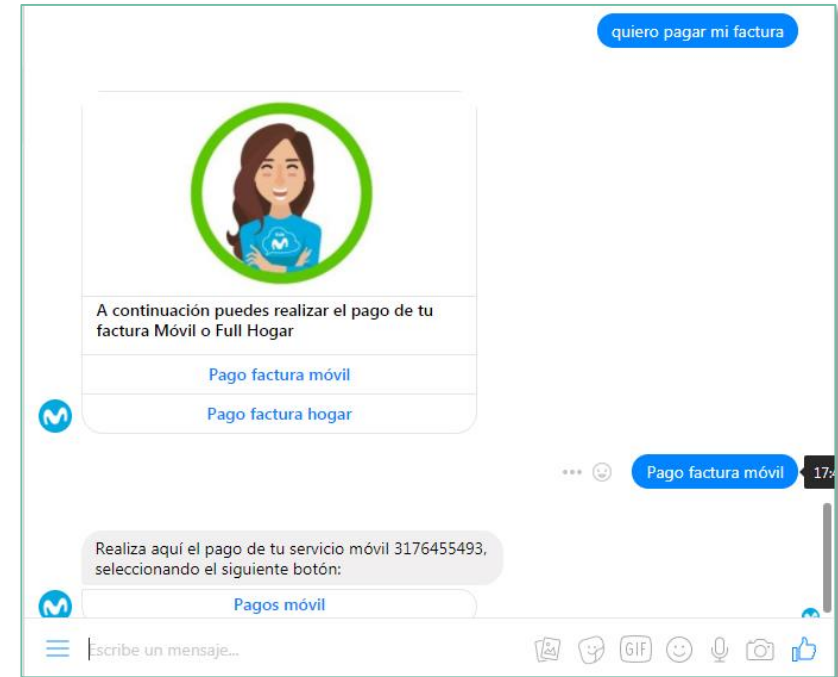
Increasing operating costs

Impact

Automated query operations (e.g. balance check, consumption, invoice download)

Money transactions (e.g. invoice payment, reloads)

Derivation to human advisor if needed



Approach

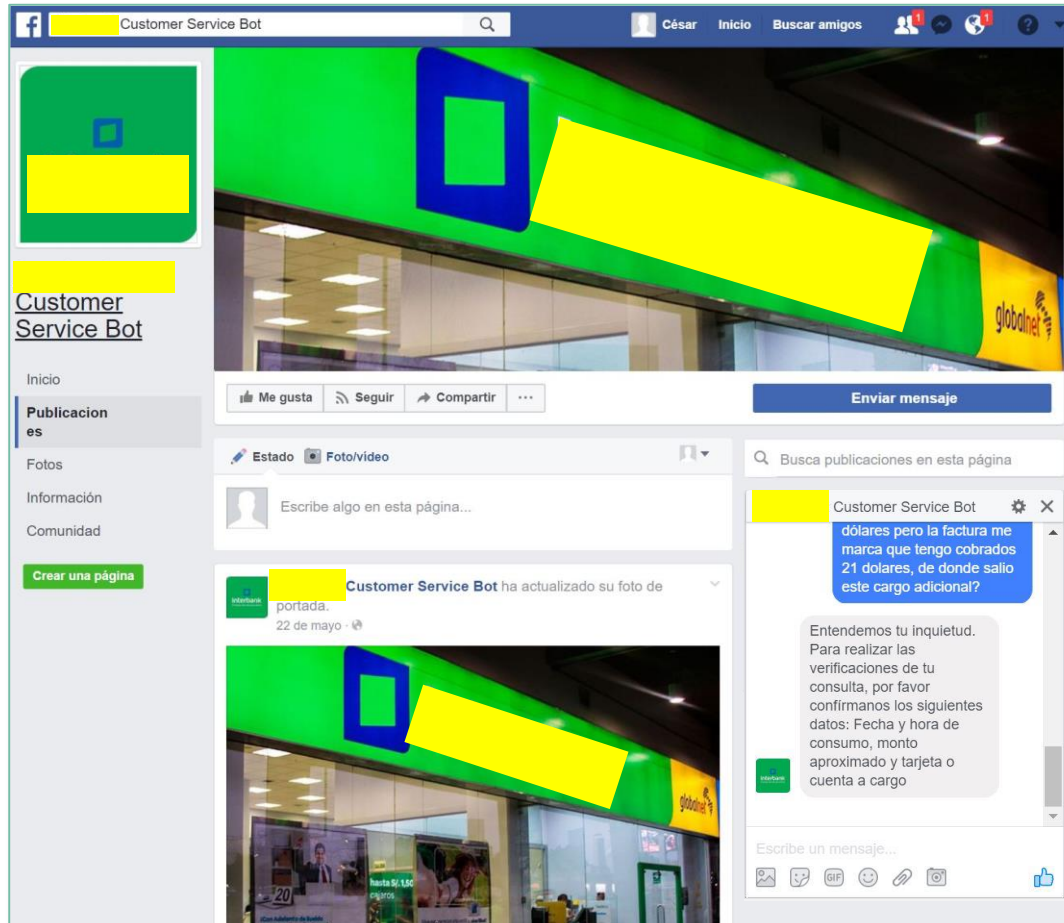
everis Virtual Assistant (eVA)

Microsoft Luis

Facebook Messenger

Improving customer satisfaction

Virtual assistant



Challenge

- New social network channels
- Increasing operating costs

Impact

- Automated client conversations
- Facebook as a communication platform

Approach

- Facebook Messenger
- Google Dialogflow

Improving customer experience

Virtual assistant

Challenge

- Reduce operating costs
- New ways of communication
- Need of an on premise and bespoke solution

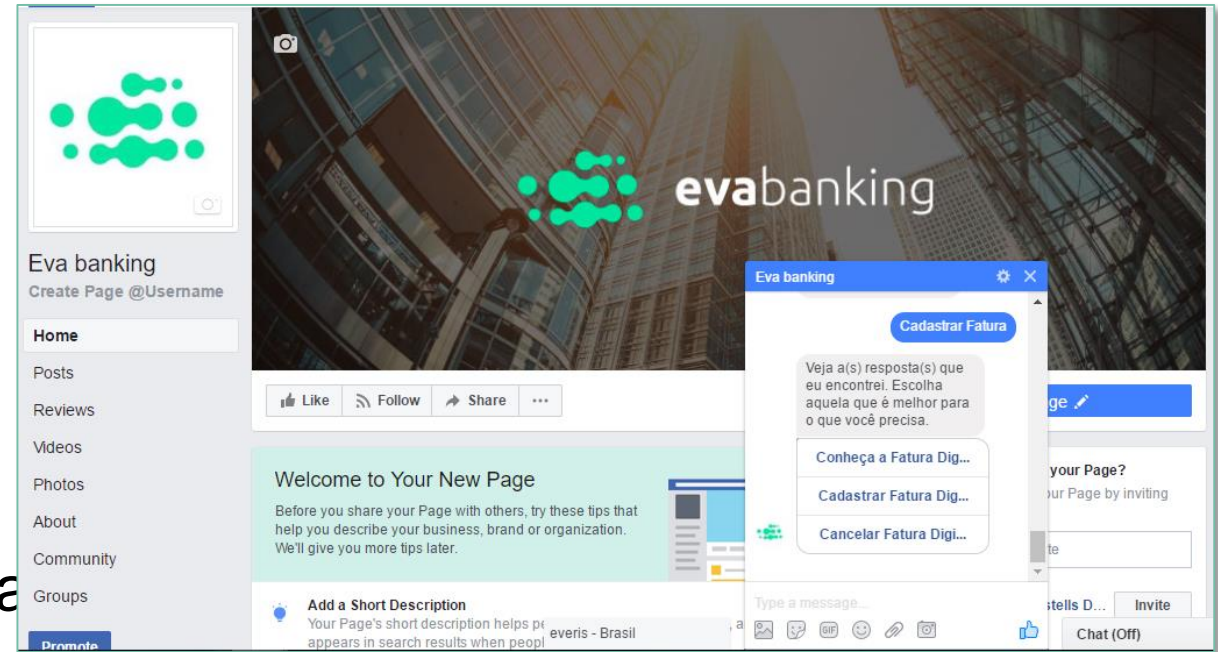
Impact

- Identifying new digital customers
- 89% assertiveness
- Multi-channel ready
- Fully monitored

Approach

- Word2vec
- Feed forward neural network
- Google Tensorflow
- eVA

eVA architecture



Winning new business

Customer sentiment analysis

“su solución no me



Challenge

We don't really know how customers feel
Online conversations could feel soulless

Impact

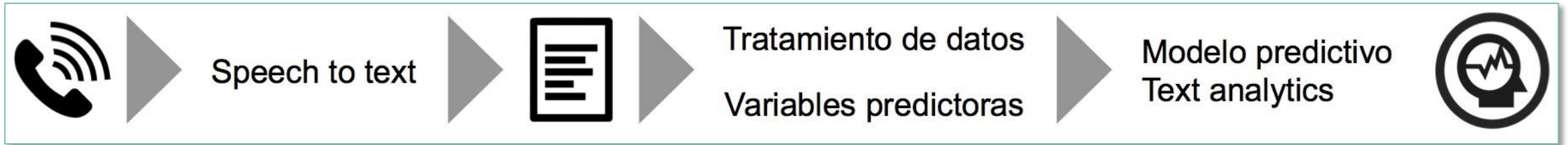
Conversation mood flow monitoring
Real-time tailored promotions
Integration with customer attendance

Approach

CNN and LSTM neural networks
Google Tensorflow

Being more effective

Customer call auditor



Challenge

Auditing a call is expensive and can't be done frequently

Just a small percentage of contact center calls can be double checked

Impact

100% of customer calls can be audited

Ability to understand if a product has been purchased in a call

Approach

Continuous bag-of-words (CBOW) neural networks

Clustering and topic modeling

ISID speech to text

Gaining insights

Automated Satisfaction Score

Promoter

Jesús Ramírez La mejor mamá del mundo, literalmente es la más cute. ❤️ Muchas gracias por todo [redacted] y siempre mantenernos comunicados! 😊 #ComparteSuAmor [redacted]
Mobile México ❤️



Like · Reply · 🍌 12 · 22 hrs

View 2 more replies

[redacted] ¡Hola, Jesús!
¡Genial! Te invito a consultar y completar las bases de la dinámica para que no te quedes fuera: <http://bit.ly/2pUwiRr> 😊
¡Te deseo mucha suerte y una maravillosa noche! 😊 AF

Passive

Mery Helen Glez Subí mi foto en mi perfil, la tengo que subir aquí en comentarios.

Like · Reply · 🍌 1 · 22 hrs

[redacted] Linda noche Mery. Coloca en nuestro post en la parte de comentarios para que participes. Mantente al pendiente de nuestras redes sociales para más información. Un gusto saludarte. Conoce lo que esta App <http://bit.ly/2oYUnax> tiene para ti MZ 😊



Novedades de la próxima actualización de WhatsApp -...

Like · Reply · 🍌 1 · 21 hrs

Detractor

Cintya I. Pérez [redacted] son una decepción!! y GRACIAS por suspenderme mi numero, que parece ser una represalia hacia mí por no querer seguir con otro plan, llevaba 10 años con mi mismo numero de telefono.

Like · Reply · 🍌 2 · May 8 at 3:29pm

View previous replies

[redacted] Estamos para servirte, quedamos a tus órdenes por este medio para futuras dudas o aclaraciones. Que tengas excelente tarde. LU

Like · Reply · Yesterday at 2:51pm

View more replies

Challenge

Loyalty studies are expensive and only periodically revised

Impact

Satisfaction score calculated from social media conversations and constantly updated

Approach

Multi-class classification
Amazon Machine Learning

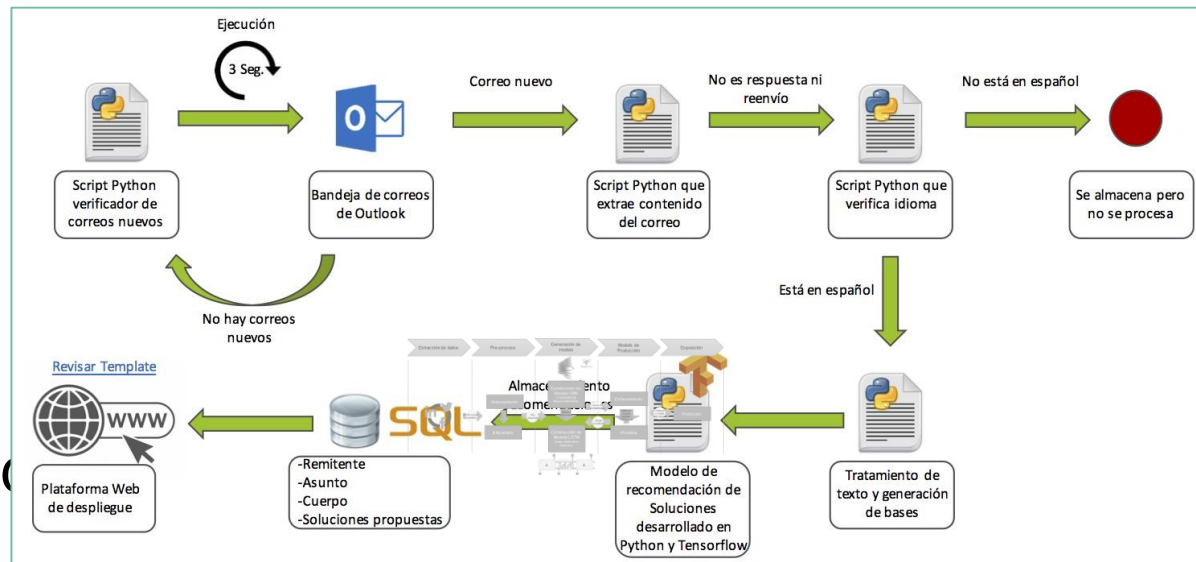
Decreasing operating costs

BPO response recommendation

Challenge

Call center costs steadily increasing due to various reasons

90% accuracy



Impact

Incident responses are automatically suggested

Completely integrated into the workflow

Approach

- Text pre-processing
- Bag-of-words
- Feed forward neural network
- Google Tensorflow

Scaling business

Automated intelligent interviews

Challenge

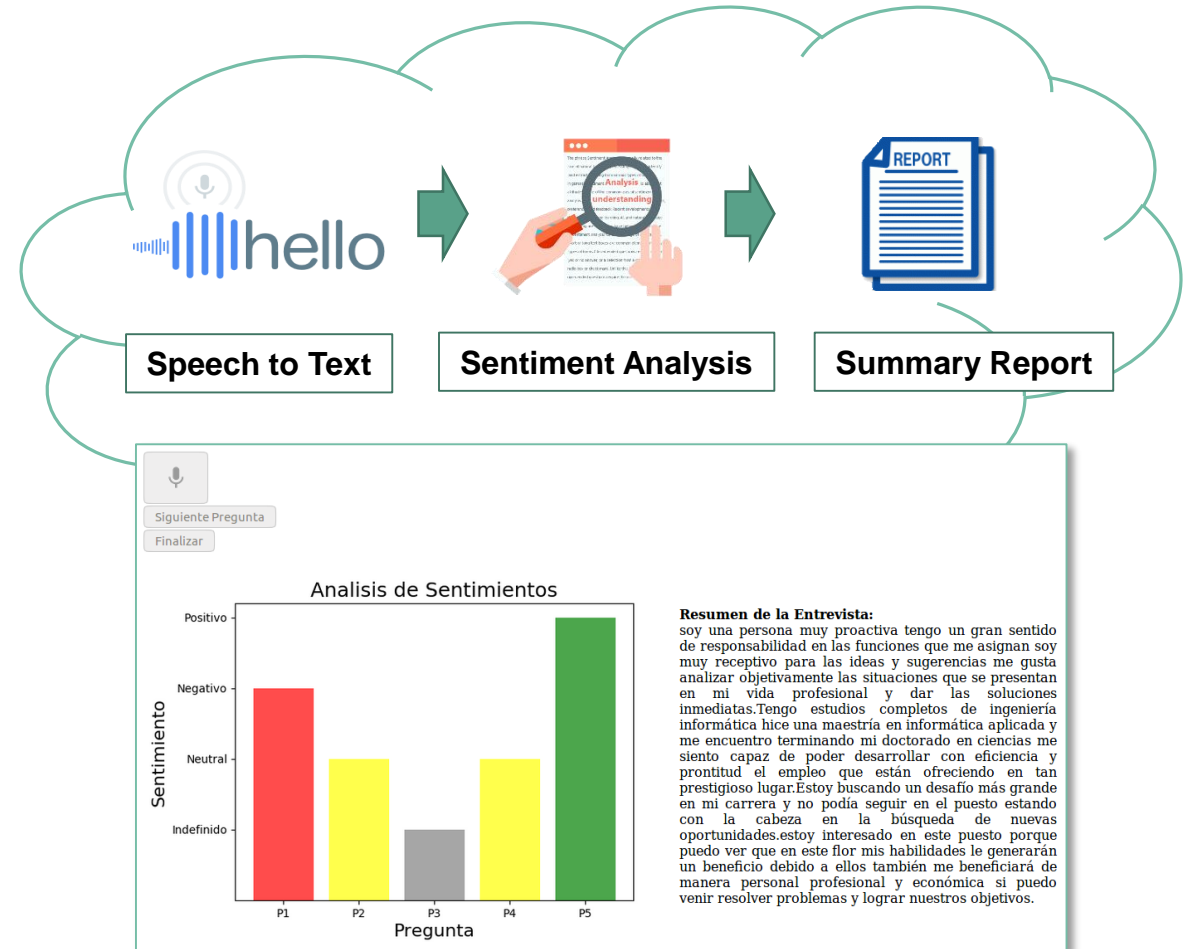
- Increasing costs of hiring
- Need to filter candidates in early stages

Impact

- Audio and text record of the interview
- Candidate sentiment monitoring
- Automated interview summarization

Approach

- Google Speech and NLP API
- Google Tensorflow



Being more effective

Augmented social media manager

¡Viva Brasil!

Este comentario no requiere ser atendido por un ejecutivo

Necesito que me ayuden con un problema que tengo

Este comentario sí requiere ser atendido por un ejecutivo

Challenge

A leading brand receives thousands of social media messages each day

Social media managers have to decide which ones should be answered

Impact

A list of messages to answer is suggested to the social media manager

His/her capacity and focus is augmented

Approach

Real-time social media monitoring
Binary classification
Amazon Machine Learning

Securing digital transactions

Intelligent fraud detection on digital channels

Challenge

Increased attempts of fraud through digital channels

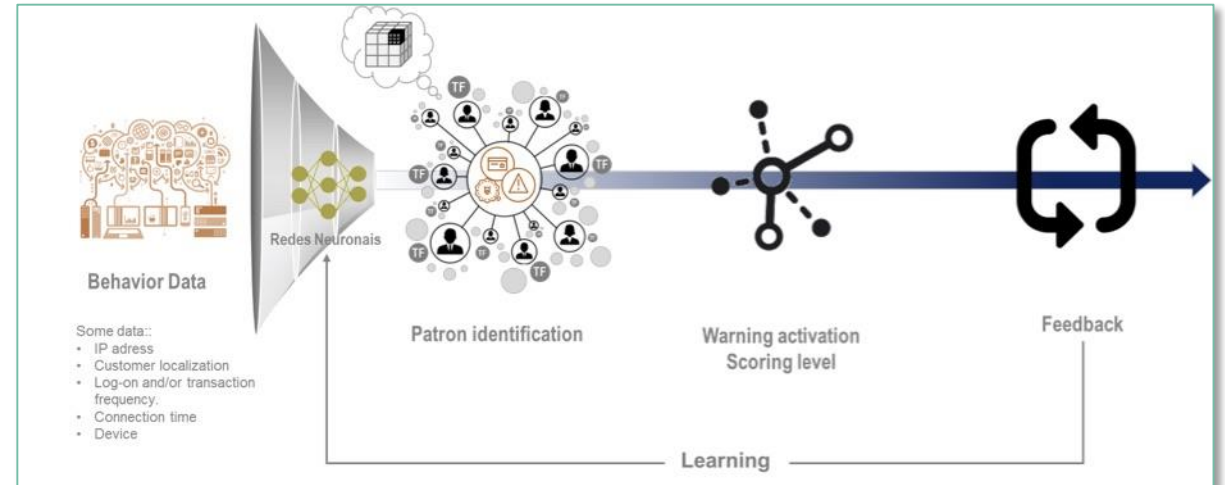
Need of balancing risk avoidance and user experience

Impact

Analysis of customer behavior in digital channels

High probability fraud patterns identification

Interrelated fraud transactions detection



Approach

Feed forward neural network

Google Tensorflow

Neo4j graph database

Preventing channels unavailability

Early warnings

Challenge

Identify non-availability issues in advance

Understand issues that could impact customer services

Impact

Predictive monitoring of availability

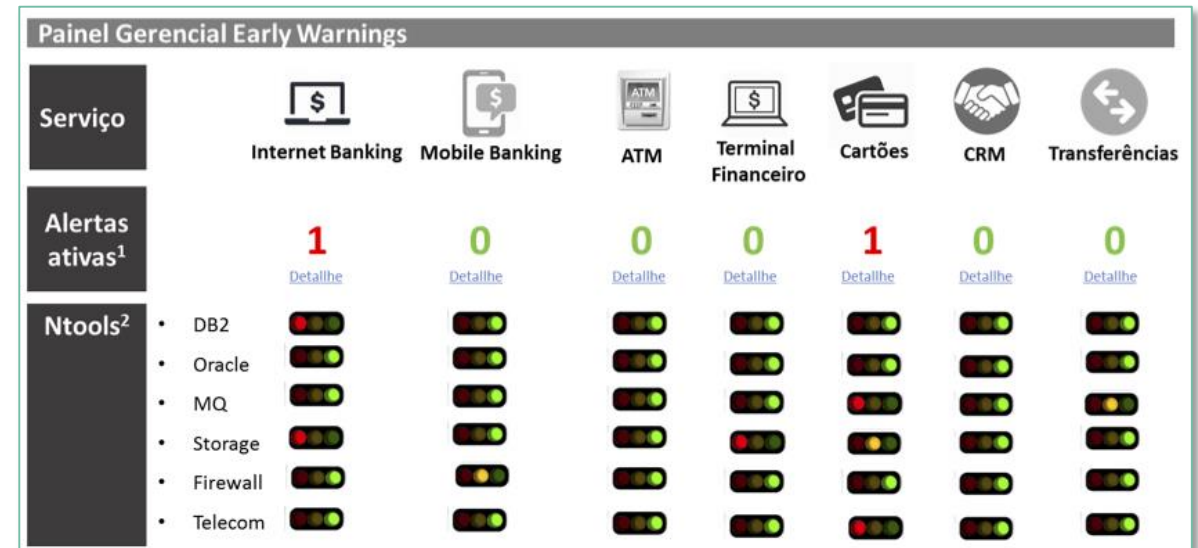
Identify high probability non-availability patterns

Approach

Real time processing

Feed forward neural network

Early warnings



Streamlining back office operations

Handwritten signature verification

Challenge

Need to streamline back office operations related to checks and contracts processing

Lack of process consistency due to human intervention

Impact

Automation of the process of verification of physical signatures

Identify high probability non-availability patrons

Approach

Convolutional Neural Networks (CNNs)

Manifold Learning

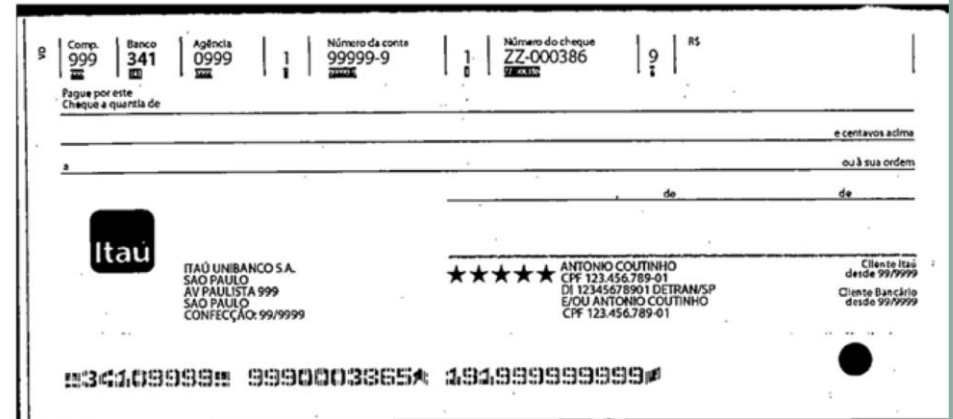
AdaBoost Classifier

Low tolerance model

Check Account signatures:



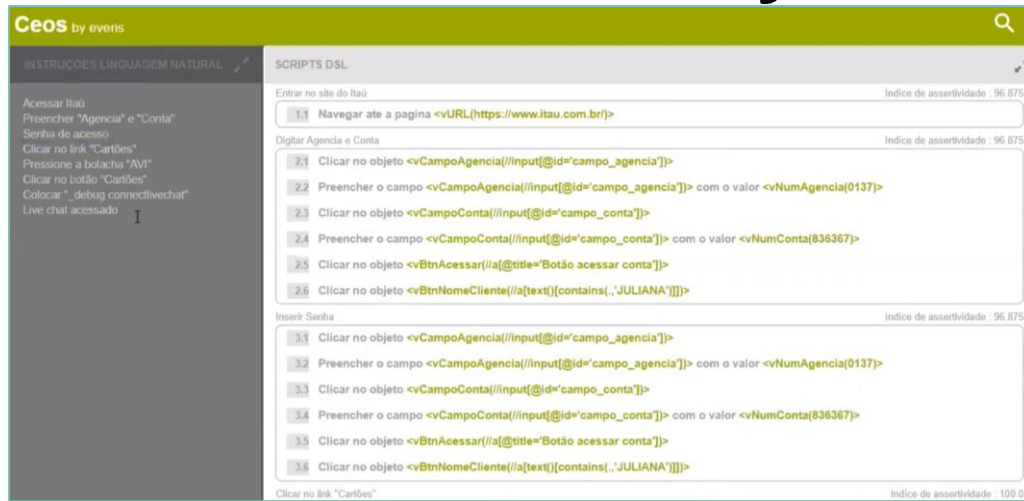
Verification documents:



Improving IT processes

Automated testing script generation

95% accuracy



Impact

Fully automated test scripts generation from functional natural language descriptions

Increased test script reutilization

Approach

Word2Vec

Entities and n-grams

Feed forward Neural Network

Google Tensorflow

Challenge

A huge number of professionals dedicated to testing tasks

Two types of activities: writing functional tests and automating them

Enhancing IT migration projects

Automatic translation

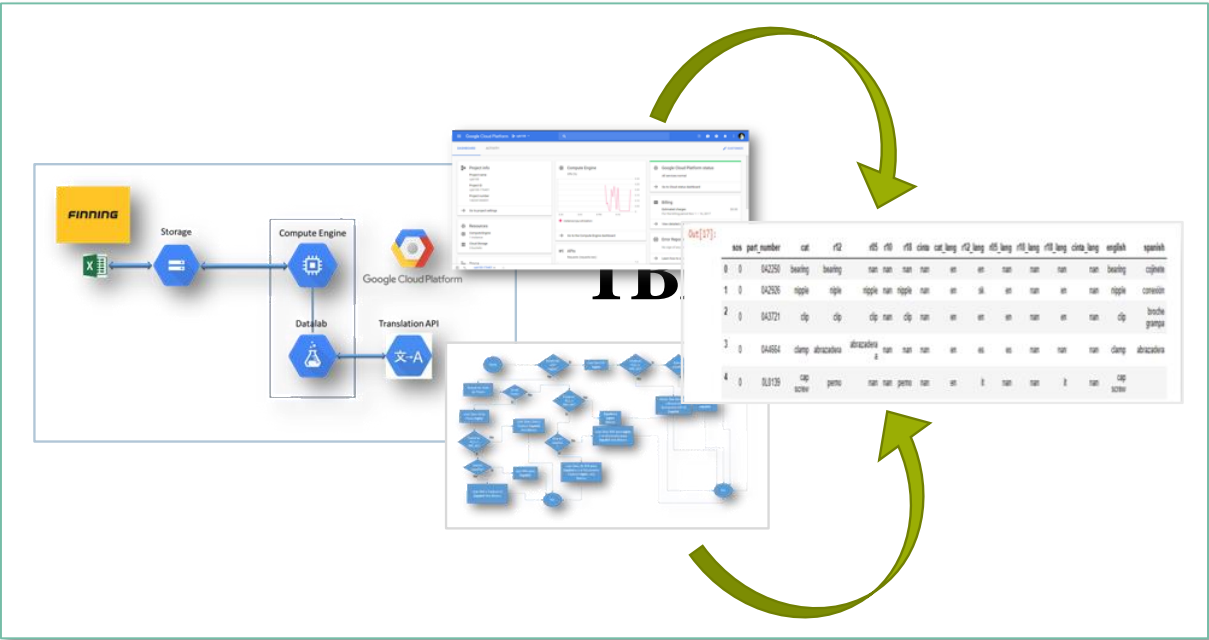
Challenge

Massive process of data migration from legacy systems to SAP

Hundred of thousands of catalog descriptions in Spanish and English

Impact

95% of 250,000 records successful translated in 2 weeks (vs. a 4 month 3 people projection)



Approach

Google Cloud Translation API

Other Google Cloud products (Storage, Compute Engine, Datalab)

Python

Saving people's lives

Preventing truck driver's drowsiness

Challenge

Drowsiness is a major cause of accidents for professional drivers

An accident implies potentially huge human and material damages

Impact

Warnings based on the driver's brain waves, detecting sleepiness

Having insights about truckers behavior using the platform data

Approach

LSTM neural network

Dynamical systems for time series

NeuroSky devices



A white thought bubble with a black outline, containing the text "Any Questions?". It is connected to the robot below by a series of smaller, fading thought bubbles.