AI & Machine learning

Experimenting with Cognitive Computing

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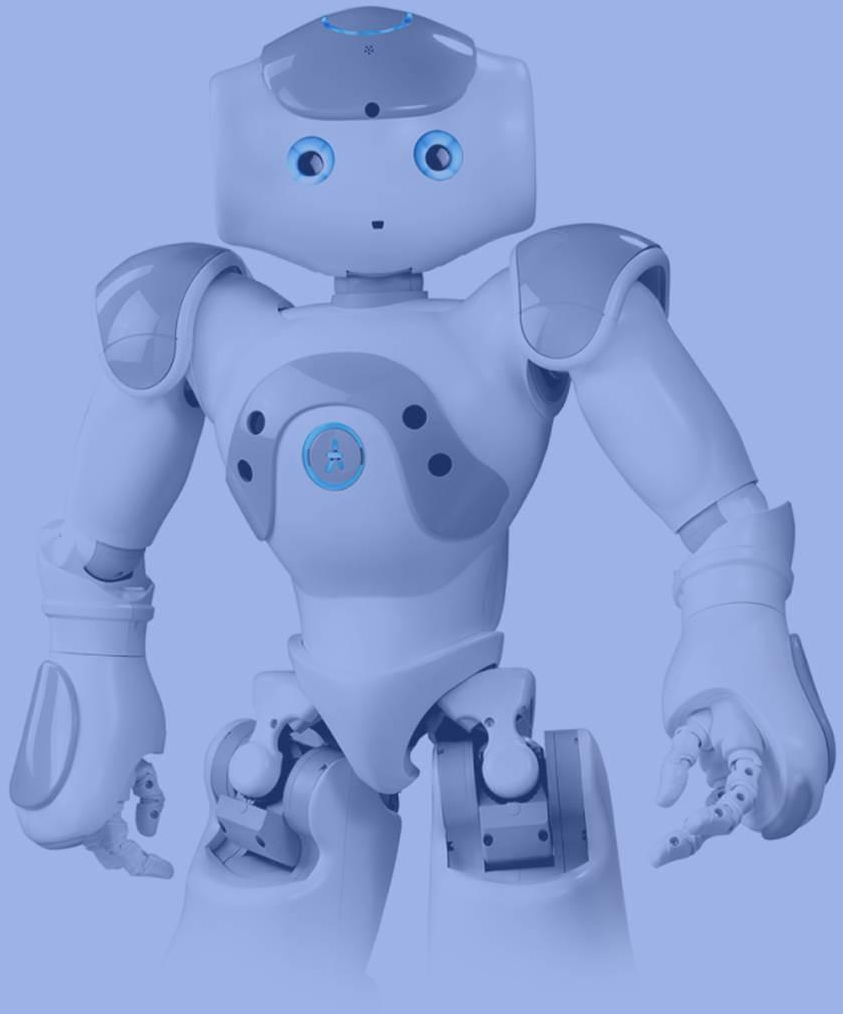
Senior R&D Engineer



WELCOME

DEMO

Introduction

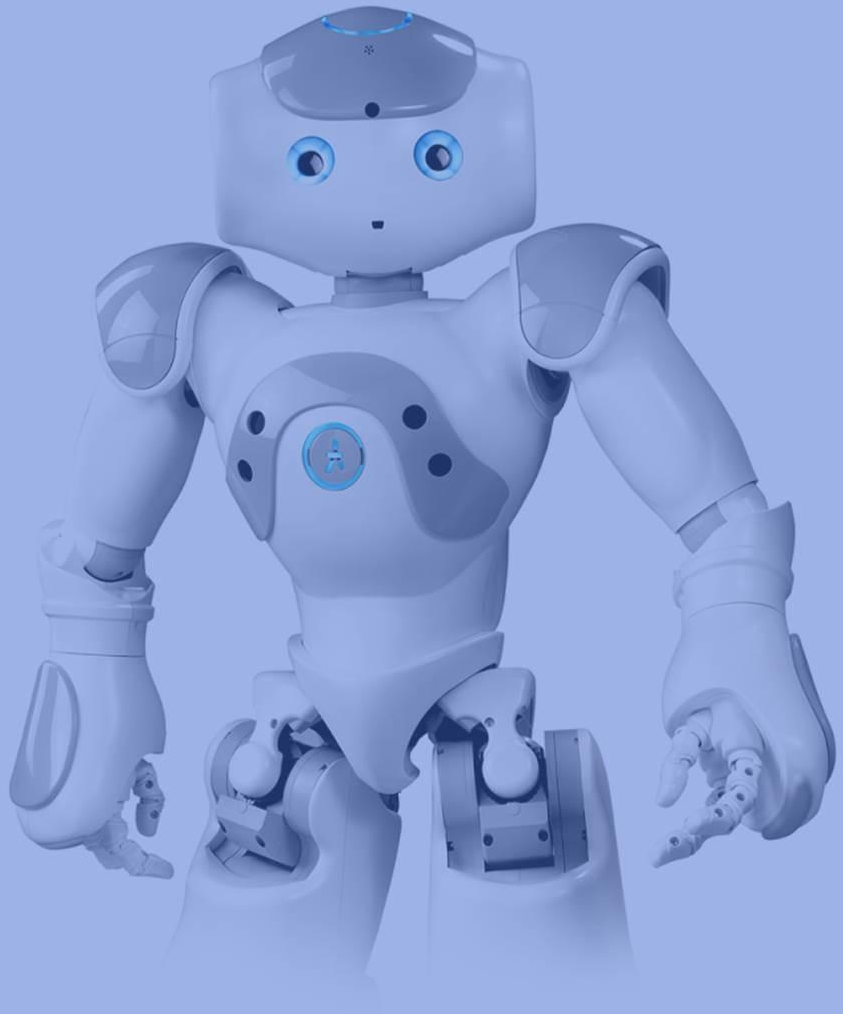
ESSI is a humanoid robot with abilities to see, talk and hear. He interacts with humans in a natural way and he never stops learning. He is a pretty clever colleague and friend.

Initially, the endgame of the Essilor Virtual Agent work was to demonstrate the accessibility and power of cognitive systems through the cloud-based platform.

To this end, I adopt this robot for research and work with him. In 3 months, I and my technical/coding experience were able to teach a robot to be able to introduce a vision therapeutic application for children - a demonstration of how accessible/impressive the artificial intelligence really is.

As part of my further work with Essi I now leverage numerous Cloud services. These services include the Visual Recognition, Natural Language Classifier (NLC), Speech to Text, and Personality Insights services. The robot program that I am written now enables a person to control the robot verbally.

Essi´s capabilities could also be demonstrated with other devices like web applications or tablets. But the humans like more to interact with the robots.



Natural Language Classifier

DEMO

Cognitive computing

Cognitive computing is the simulation of human thought processes in a computerized model. Cognitive computing involves self-learning systems that use data mining, pattern recognition and natural language processing to mimic the way the human brain works. The goal of cognitive computing is to create automated IT systems that are capable of solving problems without requiring human assistance.

Cognitive computing systems use machine learning algorithms. Such systems continually acquire knowledge from the data fed into them by mining data for information. The systems refine the way they look for patterns and as well as the way they process data so they become capable of anticipating new problems and modeling possible solutions.

Cognitive computing is used in numerous artificial intelligence (AI) applications, including expert systems, natural language programming, neural networks, robotics and virtual reality.

Machine Learning - Classify Natural Language

The statistical algorithms interprets the intent behind text and returns a corresponding classification with associated confidence levels. The return value can then be used to trigger a corresponding action, such as redirecting the request or answering a question.

In the scenario below I have two classes – positive and negative.

```
positive,positive
good,positive
excellent,positive
brilliant,positive
really good,positive
best,positive
supportive,positive
reassuring,positive
encouraging,positive
negative,negative
bad,negative
ugly,negative
really bad,negative
```

After the training of the neural network is done, here is a request for the word “awesome” which was not in the initial training data.

The Cloud service returns not only one class but up to the top five classes with the highest confidence levels.

awesome = positive


```
{
  "classifier_id" : "3AE103x13-nlc-1116",
  "url" : "https://gateway.watsonplatform
  "text" : "awesome",
  "top_class" : "positive",
  "classes" : [ {
    "class_name" : "positive",
    "confidence" : 0.9846096696233958
  }, {
    "class_name" : "negative",
    "confidence" : 0.015390330376604163
  } ]
```

ESSILOR VIRTUAL AGENT

Essilor Virtual Agent (experiment) is a new way to provide automated services to the customers. It offers a cognitive, conversational self-service experience that can provide answers and take action. The agent fit the specific business needs, provide custom content and and deep analytics provide insights on your customer's engagement with the Essilor Virtual Agent and help with the understanding of your constantly changing customer's needs. The virtual agent understands natural-language and responds to customers in human-like conversation –in multiple languages.

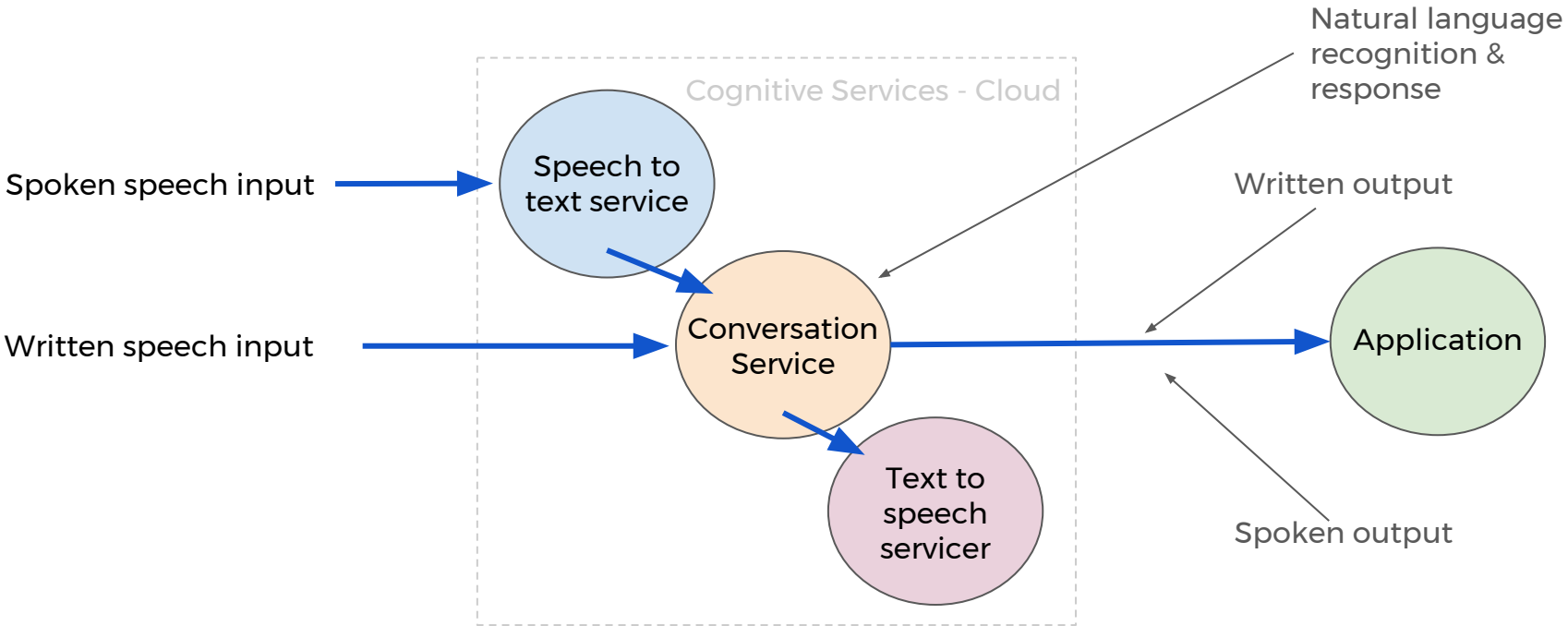
- Natural language queries and processing
- Machine learning algorithms
- Real-time computing

BUSINESS APPLICATIONS

- DIGITAL SIGNAGE ADVERTISING (in-Store)
- VISION THERAPY FOR CHILDREN (in-Store)
- CHATBOT / ADVISOR (online)
  - Customer support (Tone analyzer)
  - Technical support
  - Custom Product Search
  - Add, Remove and List items in Shopping Cart
  - Product advisor
  - Order tracking management

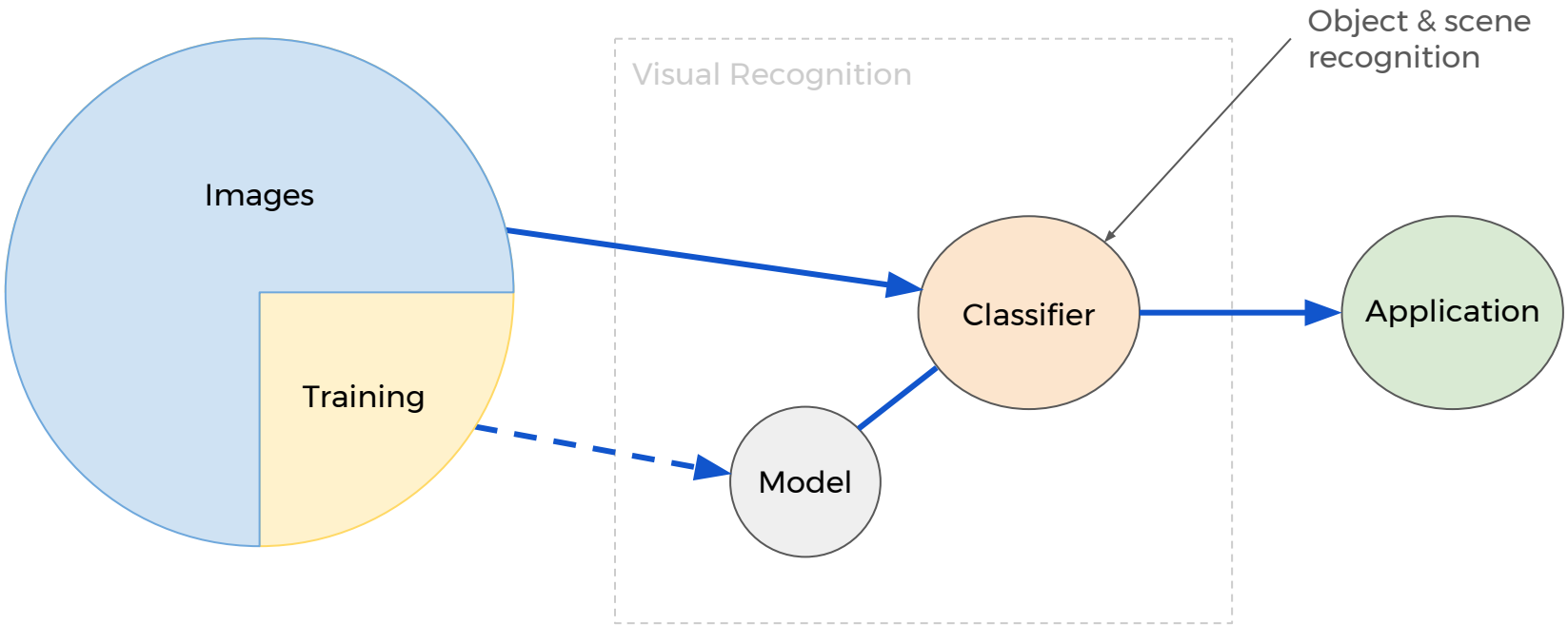
HUMAN-ROBOT ITERATION - HOW IT WORKS

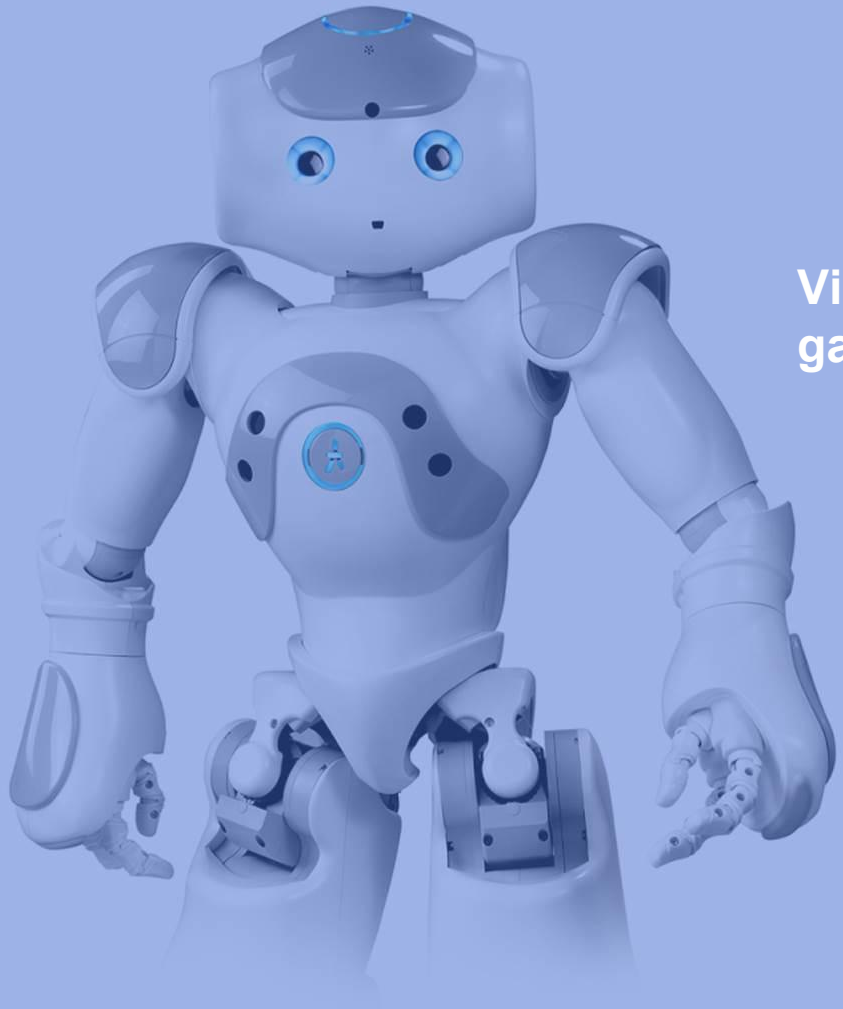
To analyze — spoken or written — commands in natural language and automatically determine their intent, this application uses three cloud-based services.



VISUAL RECOGNITION - HOW IT WORKS

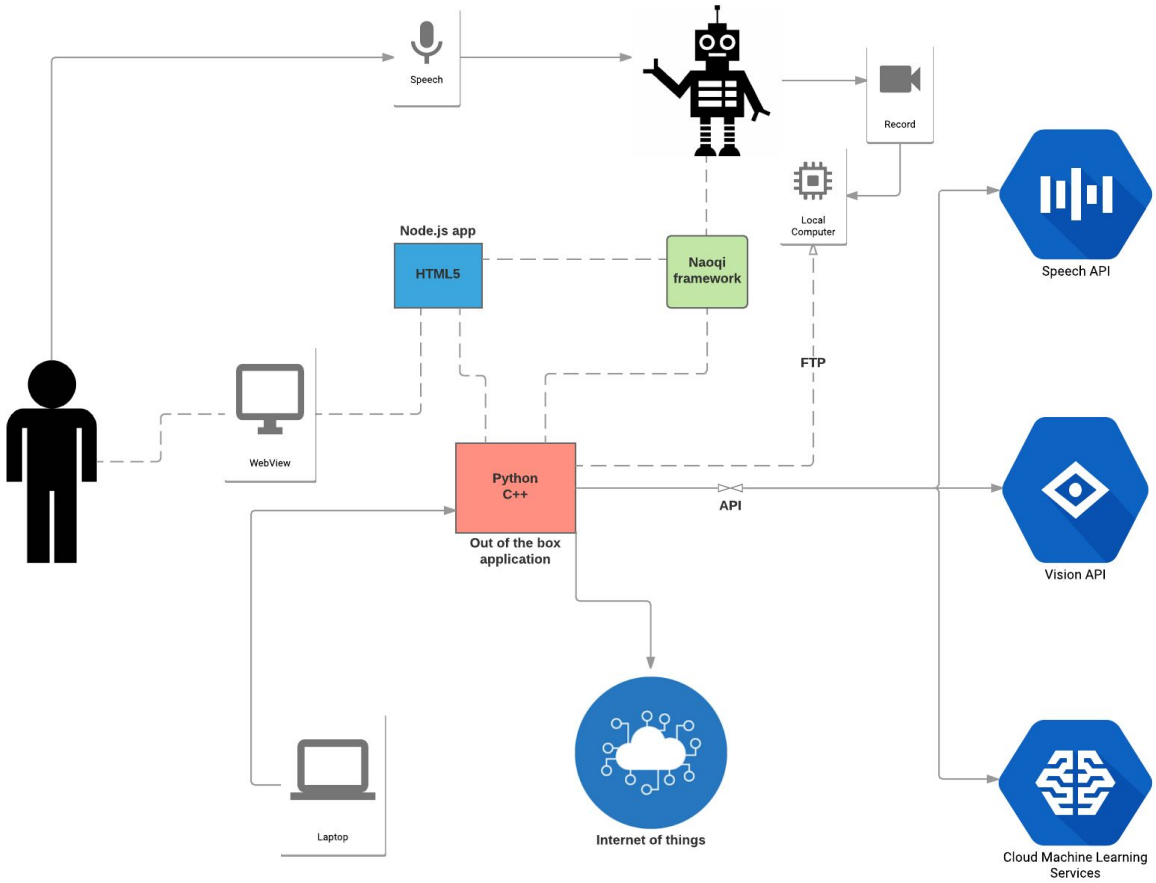
An intelligent visual recognition service that automatically analyzes and identifies objects and scenes in image files (video, etc.).





Vision therapeutic application game for children

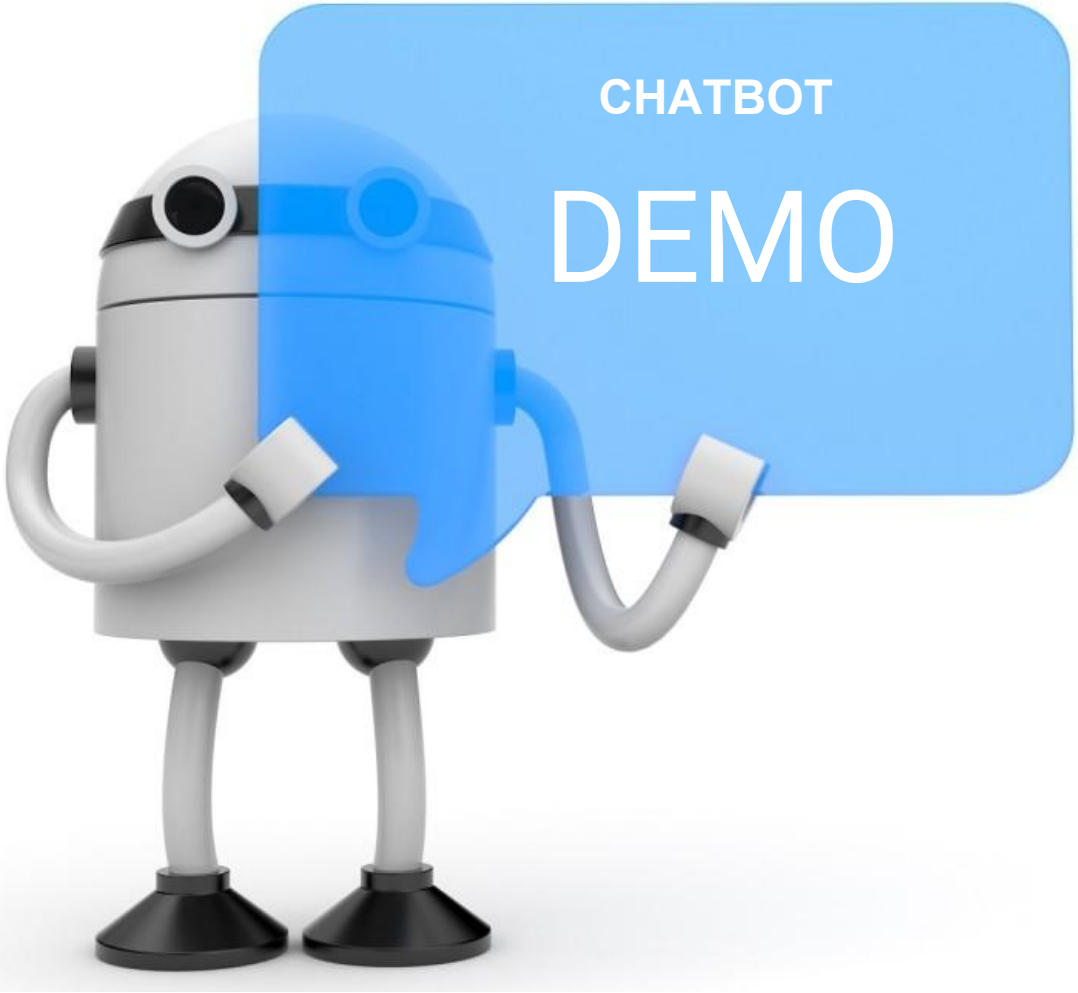
DEMO


Speech
Record
Local Computer
Node.js app
HTML5
Naoqi framework
Speech API
FTP
WebView
Python C++
API
Out of the box application
Vision API
Laptop
Internet of things
Cloud Machine Learning Services

CHATBOT

Transform your customer experience with bots

Chatbots are an essential way to let users interact with organizations. They speak the same language we do, can answer questions and offer support at a moment's notice. By adding a natural language interface to your app, website or device or even to messaging apps and social channels, bots can break down the barriers to fast, efficient customer communications.


CHATBOT
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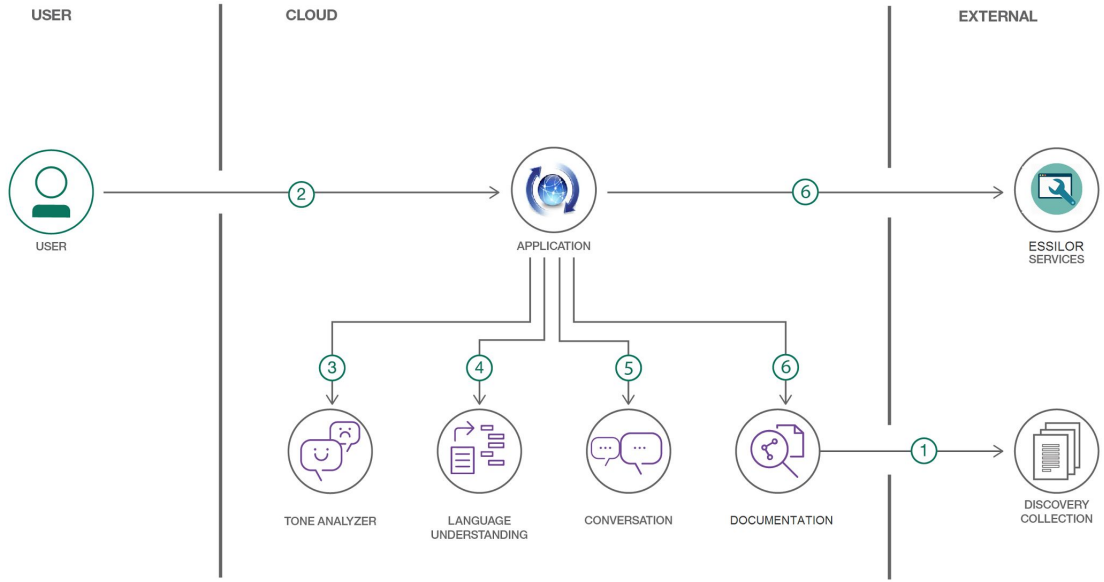
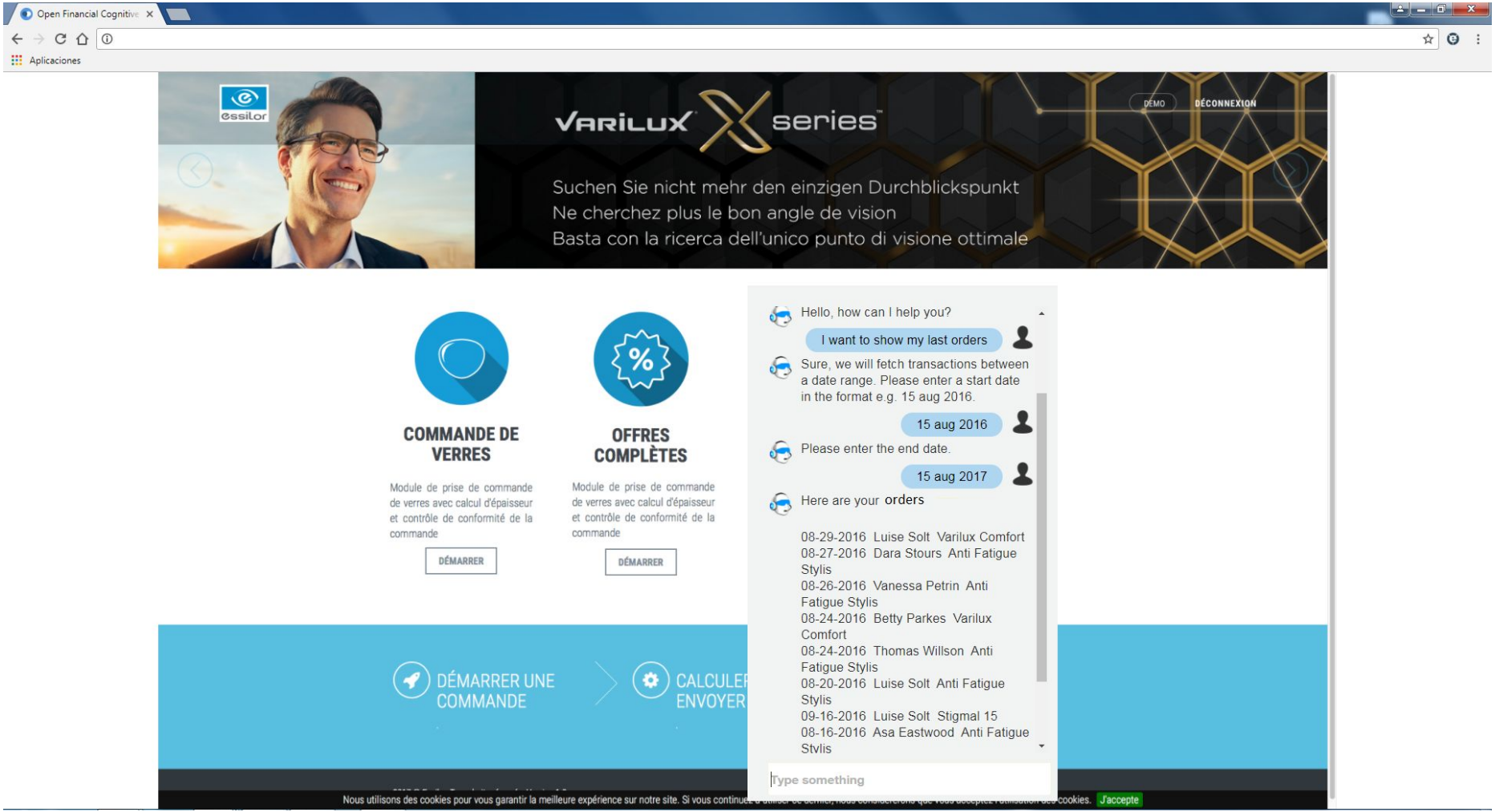


1. The FAQ documents are added to the System Cloud collection Machine learning algorithms.
2. The user interacts with a chatbot via the app UI.
3. User input is processed with Tone Analyzer to detect anger. An anger score is added to the context.
4. User input is processed with Natural Language Understanding (NLU). The context is enriched with NLU-detected entities and keywords (e.g., a location).
5. The input and enriched context is sent to conversation service. Conversation recognizes intent, entities and dialog paths. It responds with a reply and/or action.
6. A requested action is performed by the app. This may include one of the following:
    - Lookup additional information from Essilor services to append to the reply
    - Use Cloud System to reply with an answer from the FAQ documents


Aplicaciones
essilor
VARILUX X series
DEMO
DÉCONNEXION
Suchen Sie nicht mehr den einzigen Durchblickspunkt
Ne cherchez plus le bon angle de vision
Basta con la ricerca dell'unico punto di visione ottimale
COMMANDE DE VERRES
Module de prise de commande de verres avec calcul d'épaisseur et contrôle de conformité de la commande
DÉMARRER
OFFRES COMPLÈTES
Module de prise de commande de verres avec calcul d'épaisseur et contrôle de conformité de la commande
DÉMARRER
Hi, I'm Essilor virtual agent. Welcome to OpsysWeb Site. You have some notifications. Want to have a look?
Yes
No
YES
Start a new RX order.
Search a Product
Explore the last OpsysWeb promotoitons.
Suggest Promotions
Suggest Promotions
Here are some Promotions based on our recommendation.
Drive Solutions
SL Eyewear
SL Drive
Varilux x
You can find more offers at here
how to add a frame type
To select a frame type you must first choose a frame.
Type something
DÉMARRER UNE COMMANDE
CALCULER
ENVOYER
Nous utilisons des cookies pour vous garantir la meilleure expérience sur notre site. Si vous continuez
cookies.
J'accepte


Open Financial Cognitive
Aplicaciones
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OFFRES COMPLÈTES
Module de prise de commande de verres avec calcul d'épaisseur et contrôle de conformité de la commande
DÉMARRER
Hello, how can I help you?
I want to show my last orders
Sure, we will fetch transactions between a date range. Please enter a start date in the format e.g. 15 aug 2016.
15 aug 2016
Please enter the end date.
15 aug 2017
Here are your orders
08-29-2016 Luise Solt Varilux Comfort
08-27-2016 Dara Stours Anti Fatigue Stylis
08-26-2016 Vanessa Petrin Anti Fatigue Stylis
08-24-2016 Betty Parkes Varilux Comfort
08-24-2016 Thomas Willson Anti Fatigue Stylis
08-20-2016 Luise Solt Anti Fatigue Stylis
09-16-2016 Luise Solt Stigmal 15
08-16-2016 Asa Eastwood Anti Fatigue Stylis
Type something
DÉMARRER UNE COMMANDE
Nous utilisons des cookies pour vous garantir la meilleure expérience sur notre site.
J'accepte

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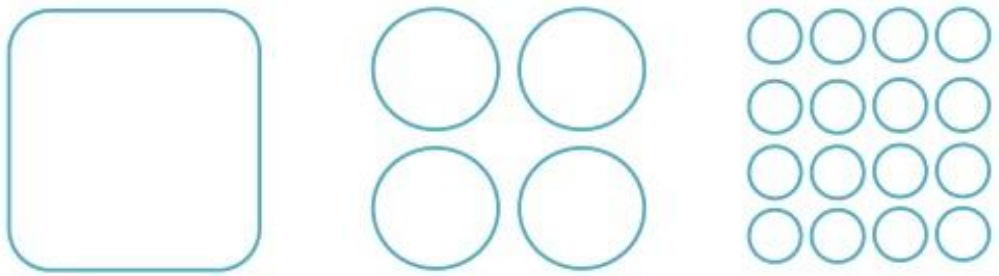

Thanks you for attending!

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