

# Hands on workshop: Give voice to your toxic aware bot



March 2020

# Hands on workshop: Give voice to your toxic aware bot

## Roadmap:

- Build your toxic detector using keras
- Apify your model
- Build your bot with Comportia
- Integrate it to facebook messenger
- Add voice using Voxia

# Tools for NLP, chatbots and Voicebots

# Tools

## ■ Libraries

- NLTK (Natural Language Toolkit)
- Stanford CoreNLP
- Apache OpenNLP
- Spacy
- Keras
- Tensorflow
- Pytorch
- fastai



# Tools

## ■ Platforms



**wit.ai**



**IBM Watson**



**SOLDAI**



COMPORTIA



**VOXIA**



# Build and Apify your toxic detector using keras

# Build your toxic detector using keras

## Keras

Keras is a high-level neural networks API, written in Python and capable of running on top of TensorFlow, CNTK, or Theano. It was developed with a focus on enabling fast experimentation. Being able to go from idea to result with the least possible delay is key to doing good research.



# Keras utilities

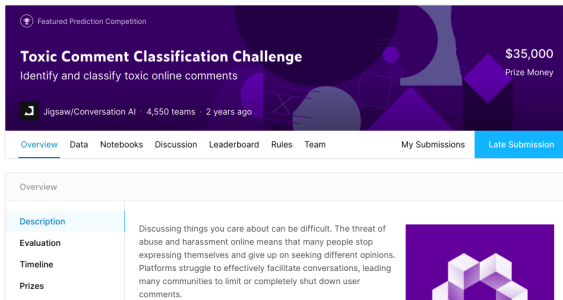
Keras let's you define easily deep learning models including a set of utilities to work with different:

- Activation function: sigmoid, tanh, ReLU...
- Layers: Dense, Input, LSTM, Embedding, Dropout ...
- Optimizers: SGD, RMDProp, Adagard, Adadelata, Adam...
- Loss functions: Hinge, Binary Cross entropy, Categorical cross entropy ...



# The database

Let's work with Toxic comments jigsaw database from <https://www.kaggle.com/c/jigsaw-toxic-comment-classification-challenge>



The screenshot shows the Kaggle competition page for the Toxic Comment Classification Challenge. The header is dark blue with white text. It includes a 'Featured Prediction Competition' badge, the title 'Toxic Comment Classification Challenge', the subtitle 'Identify and classify toxic online comments', and a prize of '\$35,000 Prize Money'. Below this, it says 'Jigsaw/Conversation AI · 4,550 teams · 2 years ago'. A navigation bar contains links: Overview (active), Data, Notebooks, Discussion, Leaderboard, Rules, Team, My Submissions, and Late Submission. The main content area has a table with a left sidebar containing links: Overview, Description (active), Evaluation, Timeline, and Prizes. The Description tab is selected, showing a paragraph about the challenge and a 3D geometric graphic.

Featured Prediction Competition

## Toxic Comment Classification Challenge


Identify and classify toxic online comments

\$35,000 Prize Money

Jigsaw/Conversation AI · 4,550 teams · 2 years ago

Overview Data Notebooks Discussion Leaderboard Rules Team My Submissions Late Submission

Overview

Description	Discussing things you care about can be difficult. The threat of abuse and harassment online means that many people stop expressing themselves and give up on seeking different opinions. Platforms struggle to effectively facilitate conversations, leading many communities to limit or completely shut down user comments.	
Evaluation		
Timeline		
Prizes		

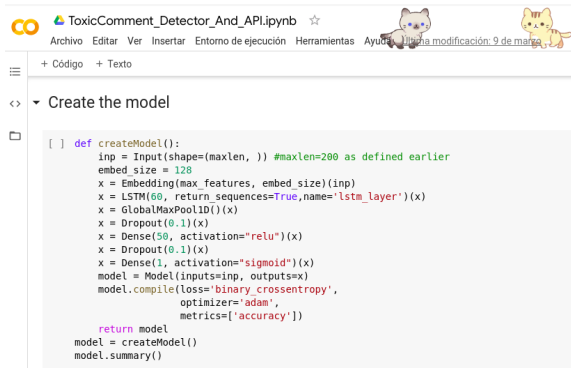
# Apify your model

You will be Apifying your model with flask web server



# Programming environment

We will be working with Google collab



```
[ ] def createModel():
    inp = Input(shape=(maxlen, )) #maxlen=200 as defined earlier
    embed_size = 128
    x = Embedding(max_features, embed_size)(inp)
    x = LSTM(60, return_sequences=True, name='lstm_layer')(x)
    x = GlobalMaxPool1D()(x)
    x = Dropout(0.1)(x)
    x = Dense(50, activation="relu")(x)
    x = Dropout(0.1)(x)
    x = Dense(1, activation="sigmoid")(x)
    model = Model(inputs=inp, outputs=x)
    model.compile(loss='binary_crossentropy',
                  optimizer='adam',
                  metrics=['accuracy'])

    return model

model = createModel()
model.summary()
```

# Let's code



<http://tiny.cc/toxicapi>

# Build your bot in comportia

# Comportia



# COMPORTIA

# What is Comportia?

Comportia is a platform to create and administer chatbots.

It works using intents and entities detection.

But also has an extra called behaviours, which are used to perform specific actions.

# Intents

Are the themes or general sense of a sentence during a conversation:

Example:

**What** is the coronavirus?



# Intents

**COMPORTIA** CONVERSATION TOPICS

Track Bot Conversation Topics | Export Topics

URL: Topics | Register: 5

Search Bar: Topics

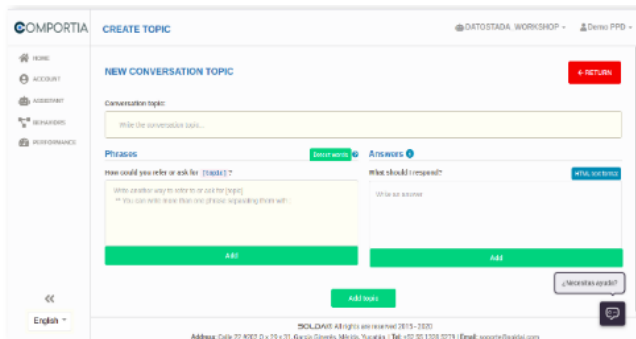
ID	Topic	IT	Actions
01	Greeting		[Blue] [Green] [Yellow] [Orange] [Red]
	Hi		
	How are you?		
	What's up?		
	Good morning!		
	Hello		
	Bye		
02	Person		[Blue] [Green] [Yellow] [Orange] [Red]
	Yes		[Blue] [Green] [Yellow] [Orange] [Red]
	No		[Blue] [Green] [Yellow] [Orange] [Red]
	Question		[Blue] [Green] [Yellow] [Orange] [Red]

Showing 1 - 5 of 7 registers

English

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Address: Calle 33 4082 2 x 21 y 25, Centro Histórico, Mérida, Yucatán, México. Tel: +52 961 528 6579 Email: info@comportia.com

# Intents



# Entities

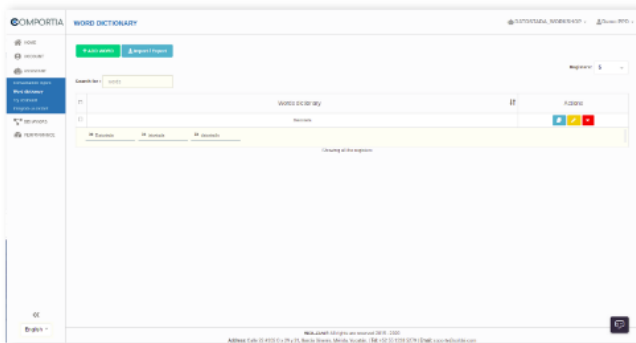
Are the objects mentioned during the interactions, those things that the user refers as specific instances inside an intent.

They are useful to address specific points in the conversation.

Example:

What is the **coronavirus**?

# Entities



# Entities

COMPORTIA CREATE WORD DATOSTADA WORKSHOP Demo PPD

HOME ACCOUNT ASSISTANT DEMANDS PERFORMANCE

NEW WORD

What word would you like to add?

Write the word...

What other ways can you say it?

Write other variants (synonyms) of the word...

Add

Cancel

¿Necesitas ayuda?

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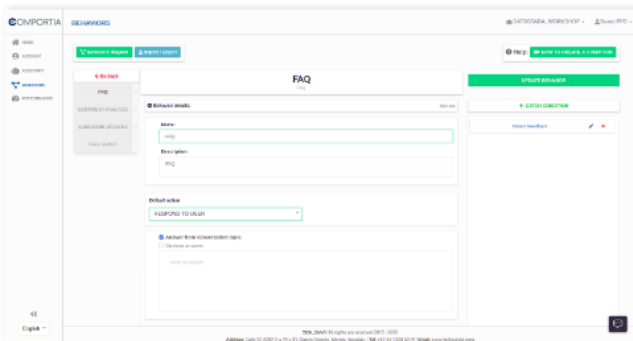
# Behaviours

They are flows to make decisions based on state machines, where each state machine have a set of states and each state can have multiple sets of conditions, actions and transitions.

The states in the platform are called **behaviours**.



# Behaviours





# Behaviours

X

New condition

Name:

When the detection name you desire to do

What do you need to detect?

Select a condition

▼

What do you want to do when detects

Select an Action

▼

Change the behavior?

☐ NO

CREATE

# Behaviours

Condition → What do you need to detect?

Action → What do you want to do when detects

Transition → Change the behavior?

NO

CREATE

# Conditions

List of conditions available in Comportia:

- Comments
- Conversation themes
- Dates
- Email
- Multiple choices
- API validation
- Number
- Data verifications

# Actions

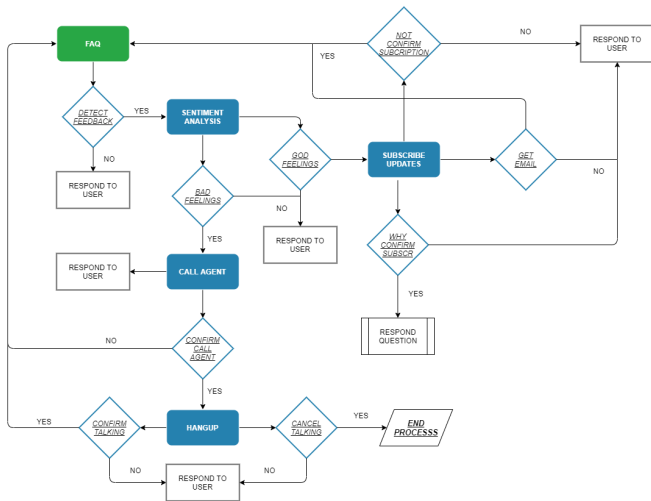
List of actions available in Comportia:

- Answer to the user
- Send email
- API call
- No answer

# Integrations



# Workflow



# Add voice to your bot using Voxia

# Voxia





# Voxia



# Help us improve

<http://tiny.cc/datostadaeval>