



Informatique décisionnelle

Hes·so

Haute Ecole Spécialisée
de Suisse occidentale

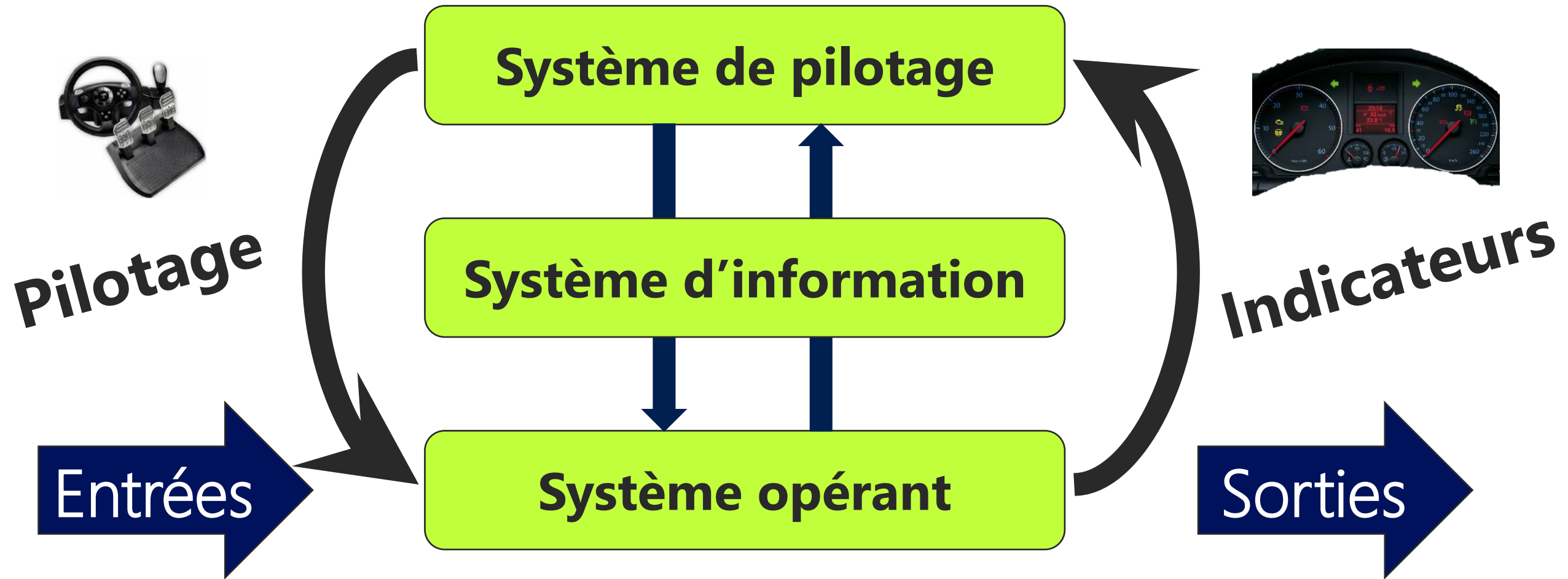
Fachhochschule Westschweiz

University of Applied Sciences and Arts
Western Switzerland

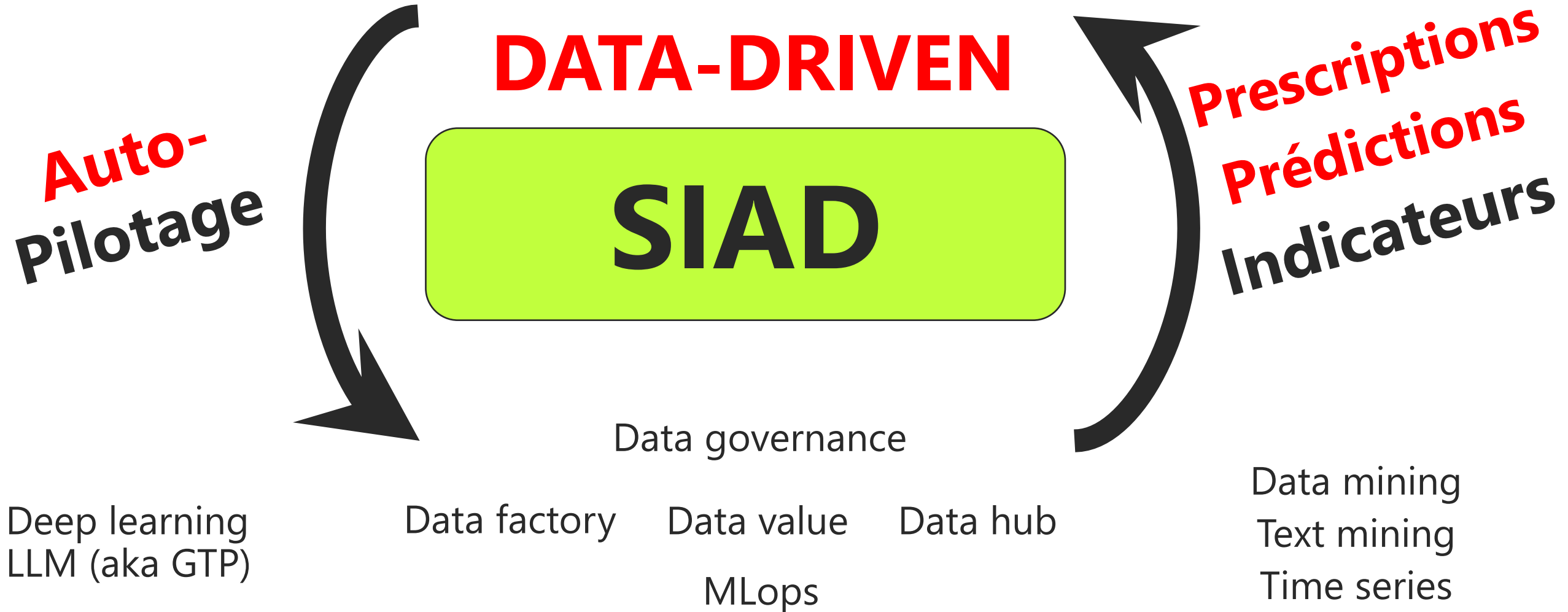
Définition?

L'informatique décisionnelle est l'ensemble des méthodes, moyens et outils informatiques qui permettent de collecter, consolider, modéliser et restituer les données, matérielles ou immatérielles, d'une entreprise en vue d'offrir une aide à la prise de décision et au pilotage de l'entreprise.

Pilotage et indicateurs

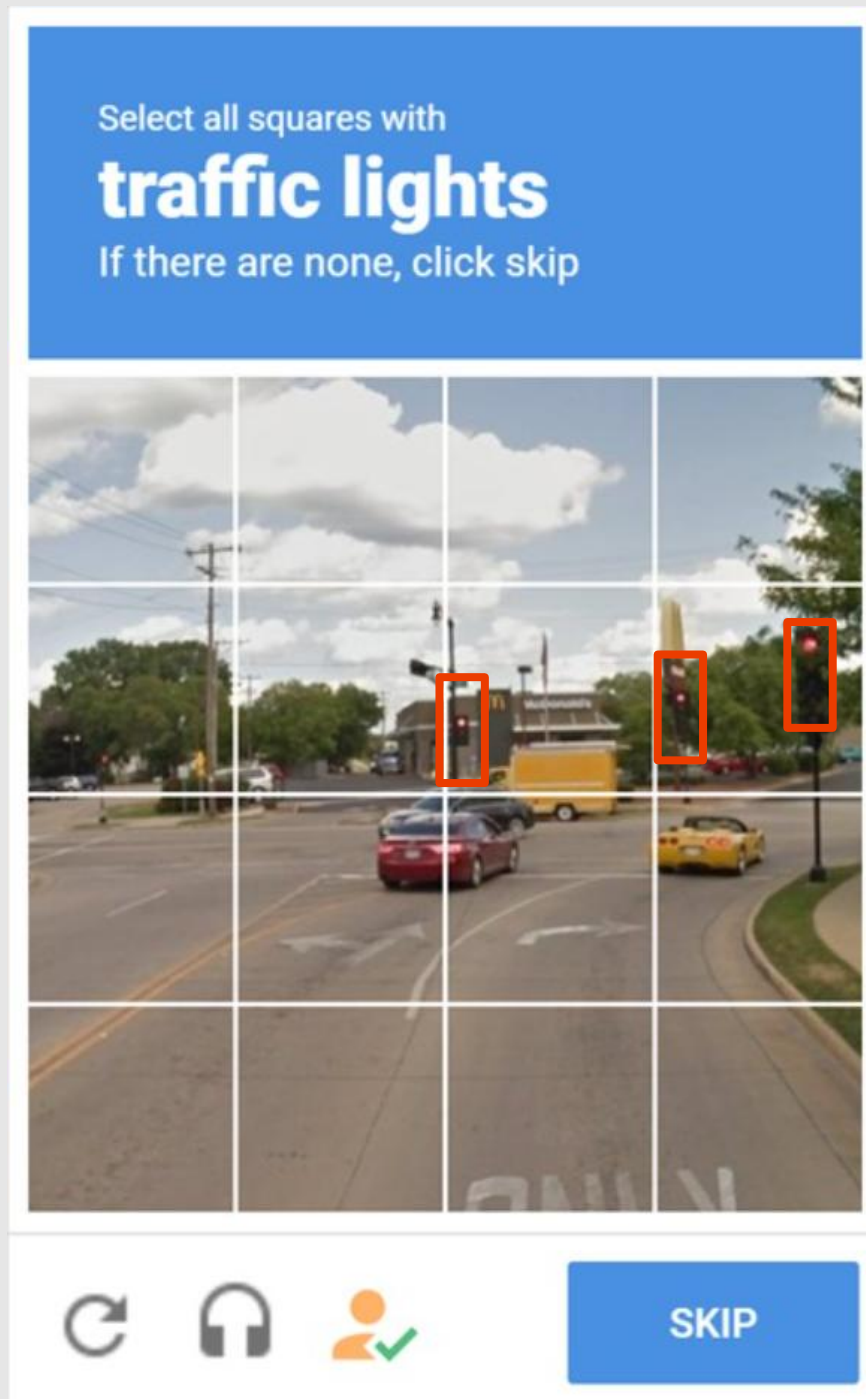


Informatique décisionnelle





Labellisation des données



Le module BI

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Western Switzerland



C

Chief

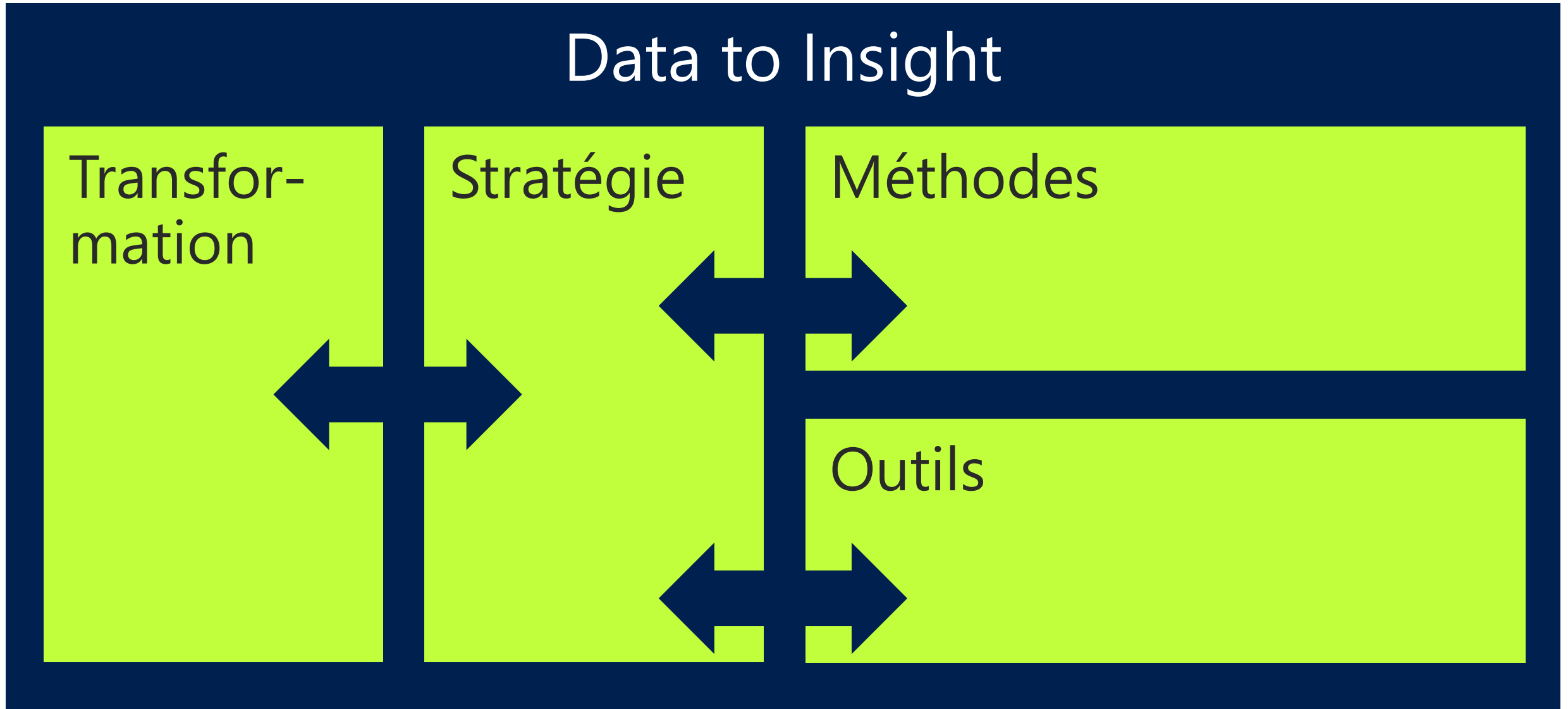
D

Data

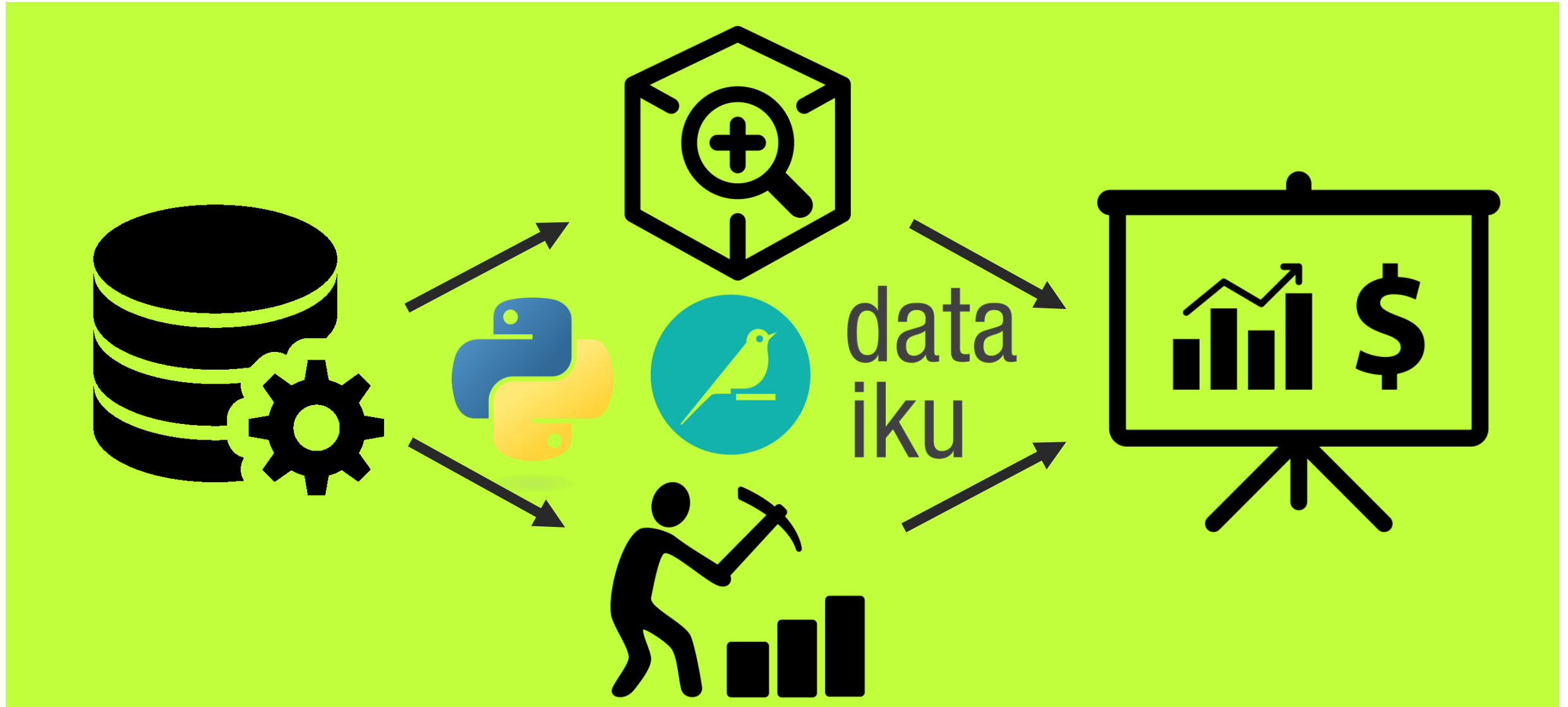
O

Officer

Organisation du module



From data to insight





Organisation

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University of Applied Sciences and Arts
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Nano Banana 2 | Picture of a classroom packed with students taking notes on their laptop, one student raise her hand

Module BI

Cours BI

8 journées

4 intervenants

Mix théorie et hands-on

5 ECTS

Projet BI

Approfondir un domaine

R&I

Réalisation personnelle

4 ECTS



Cas Festival

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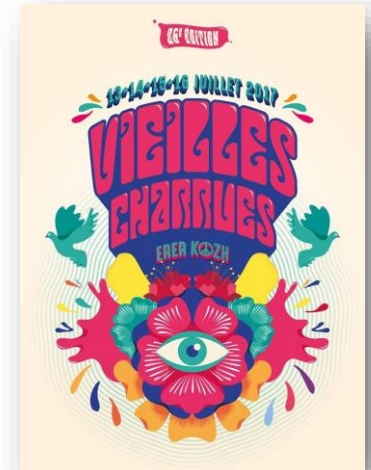
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DALL·E | 35mm Photo, Long Exposure, of a crowd dancing in front of an open-air stage at night

Acte 1

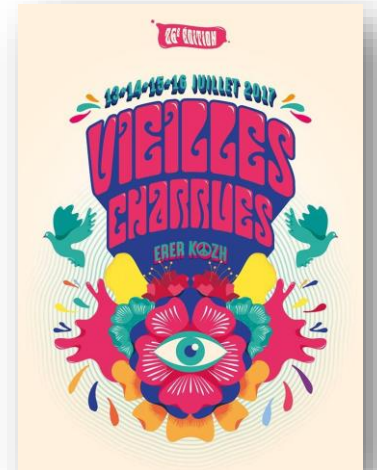
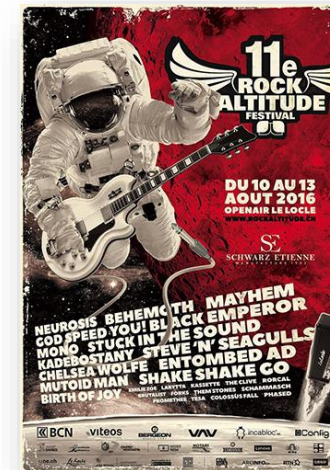
Chaque festival doit trouver le meilleur mix d'artistes permettant d'optimiser son line-up en fonction de son budget et des contraintes externes.



Acte 1

Contraintes:

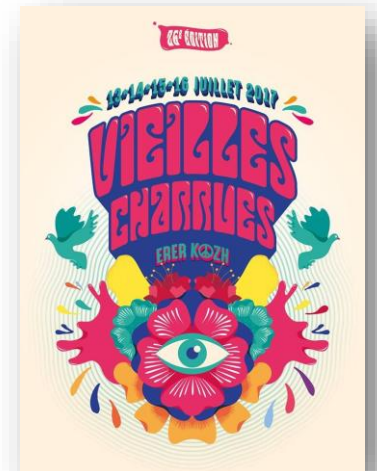
- Disponibilité des artistes
- Bundles des maisons de disques
- Budget à disposition **30-40%**
- Cohérence de la programmation

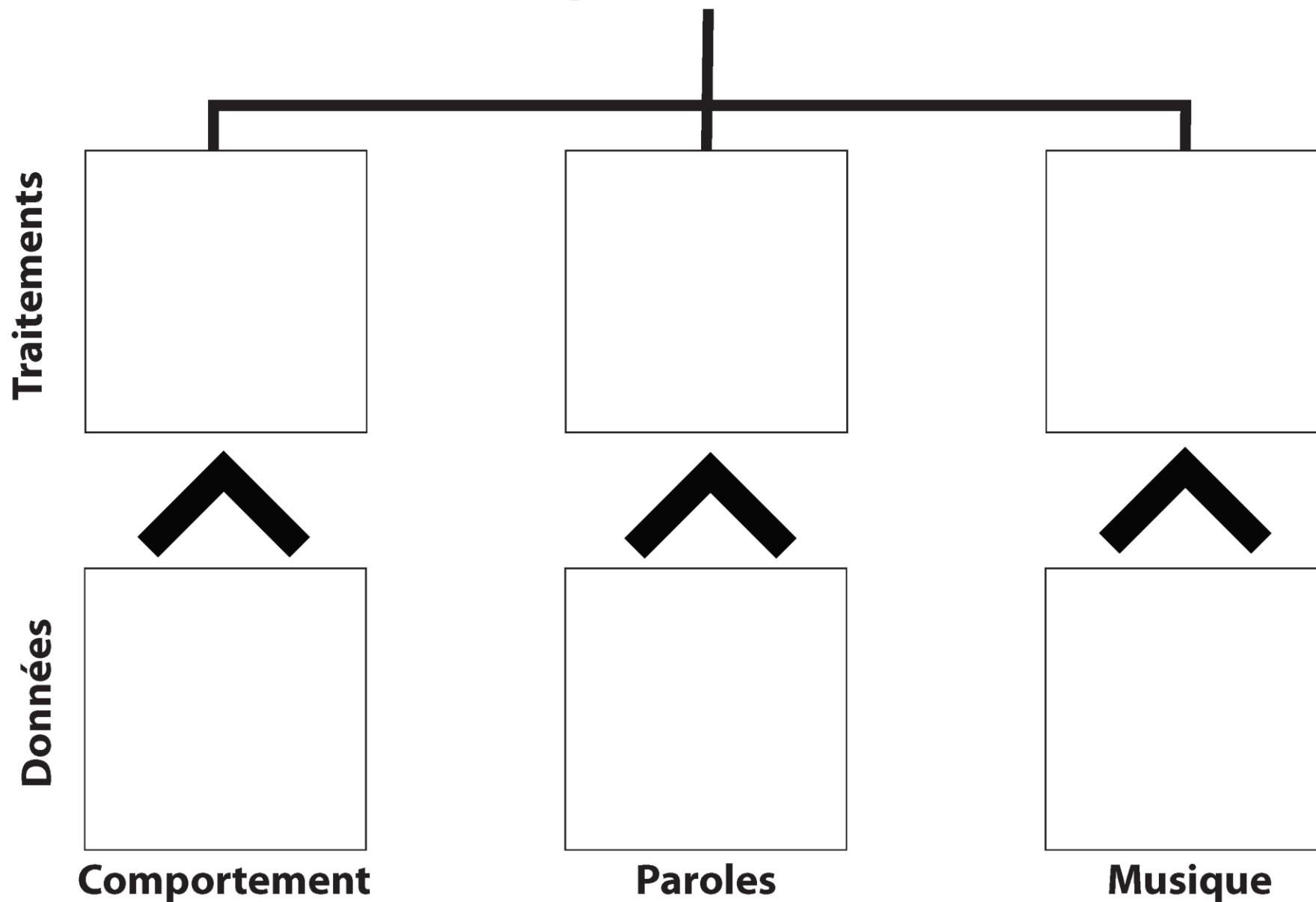


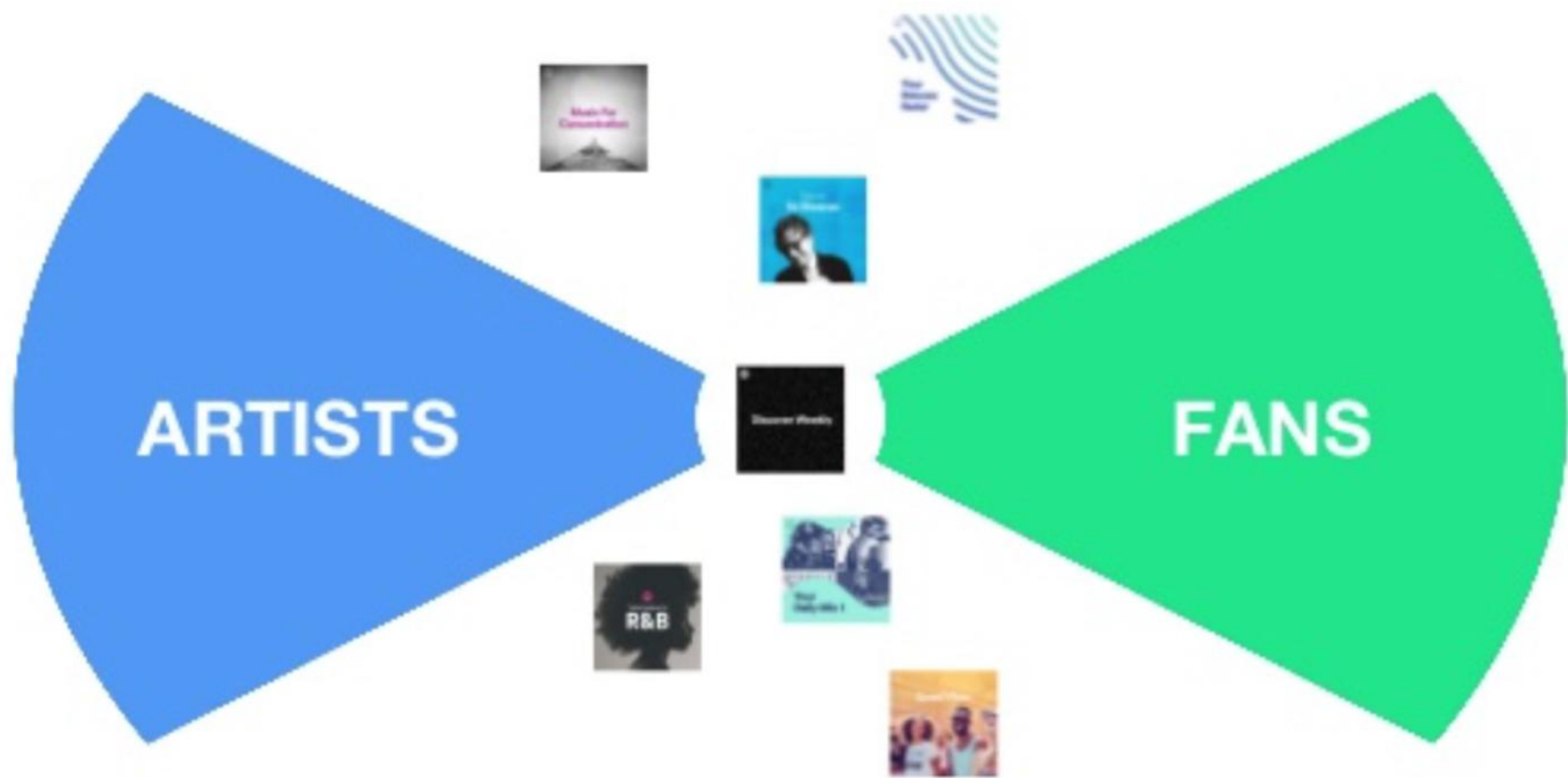
Acte 1

Spotify vend un service qui permet d'optimiser son line-up en fonction des préférences d'écoute des festivaliers.

Expliquez comment fonctionne un système de recommandation d'artistes tel que celui de  Spotify®







User Engagement Mission:

Match fans and artists in a personal and relevant way.

3 modèles de recommandation

Collaborative filtering

Uses your behavior and that of similar users.

Natural Language Processing (NLP)

For song lyrics, playlists, blog posts, social media comments.

Audio models

Used on raw audio.

Collaborative filtering

JAKE



Jake écoute **Dark Gravity** et **Robin Schulz**

FUNMI



Funmi écoute **Mauve**

NICK



Nick écoute **Robin Schulz**

Qu'est-ce que Nick pourrait aimer d'autre?

The Spotify blob that represents my musical tastes

Core taste preferences →

White line = Discover Weekly songs

Funk/soul

- > The Jackson 5
- > James Brown
- > Allen Toussaint

Indie folk/rock

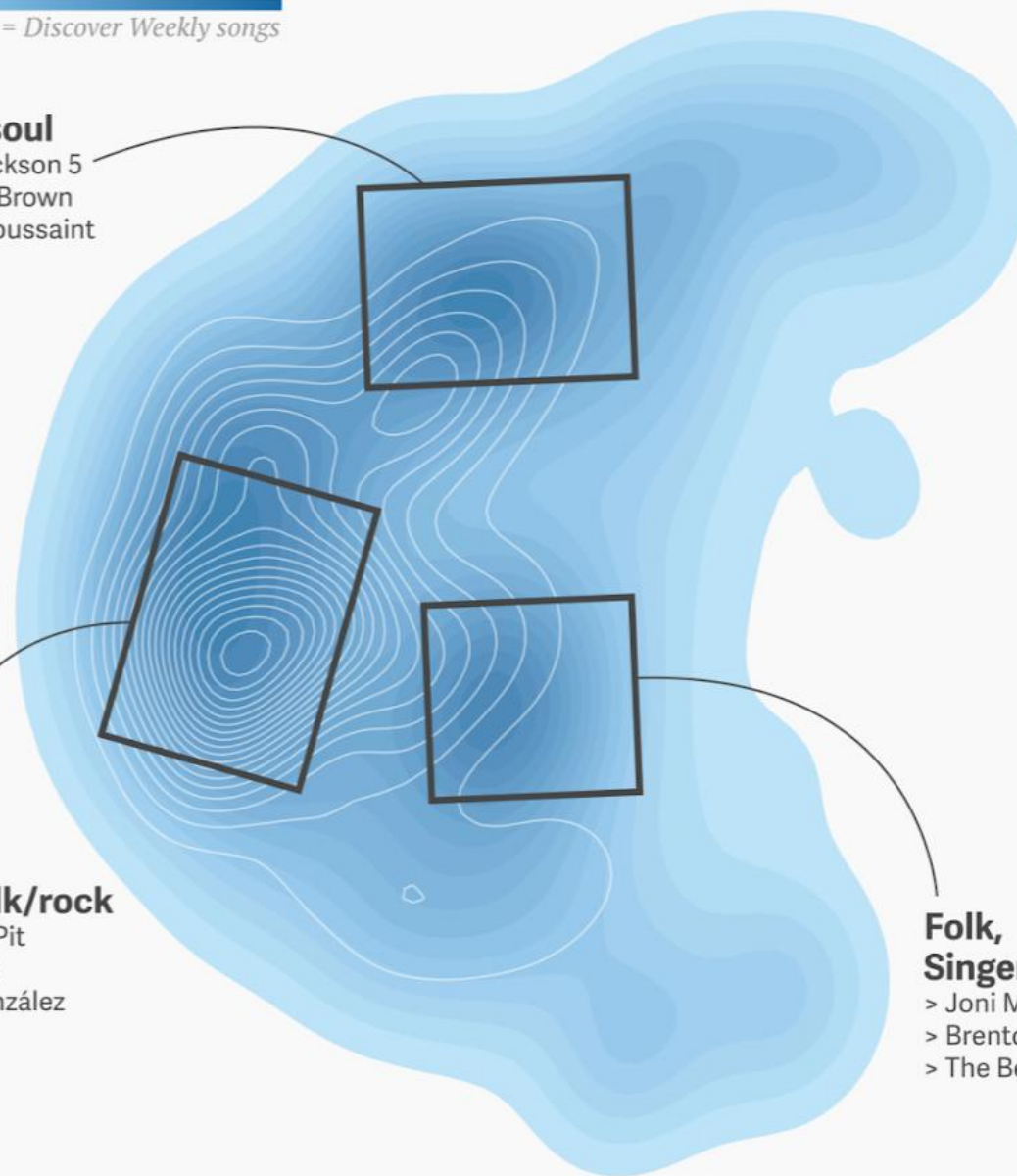
- > Passion Pit
- > The Arcs
- > José González

Kids' songs (for my daughter)

- > Susie Tallman

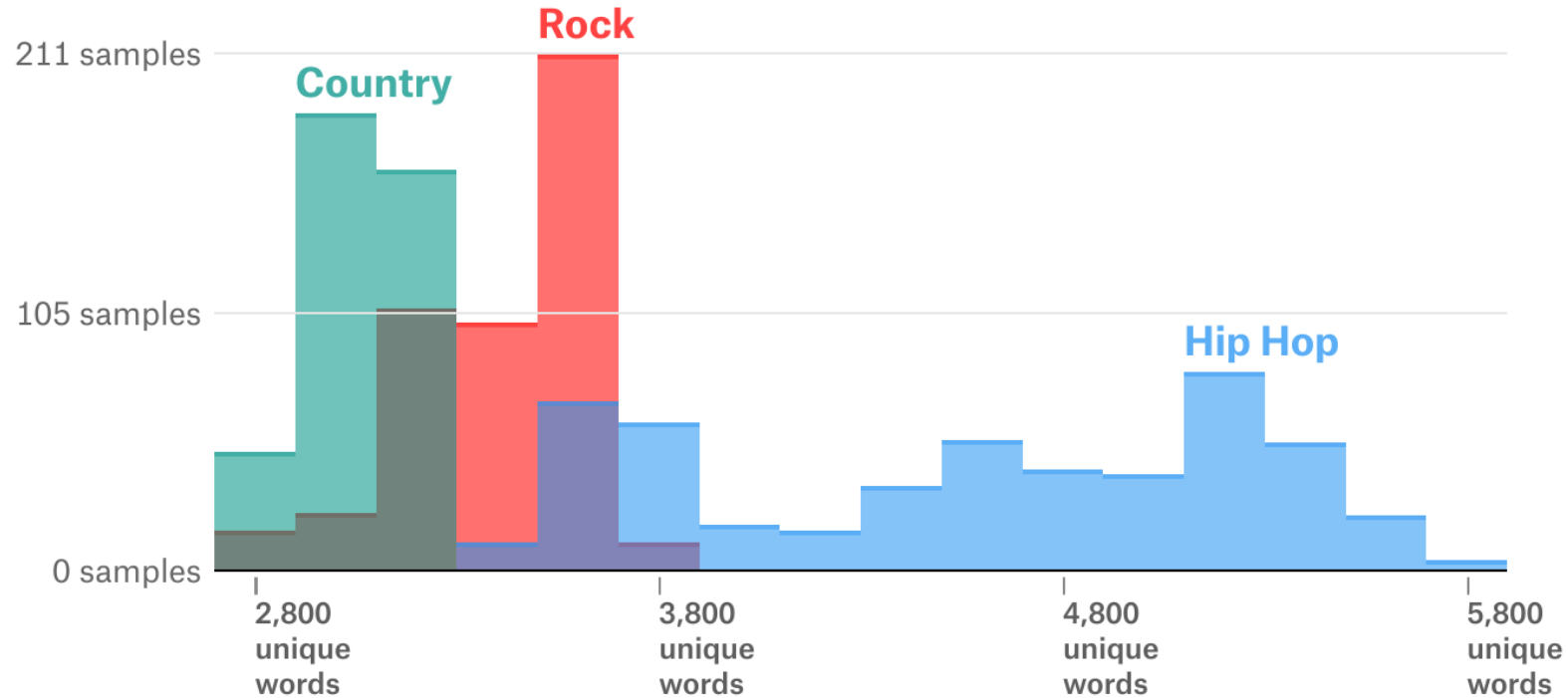
Folk, Singer-songwriter

- > Joni Mitchell
- > Brenton Wood
- > The Beach Boys



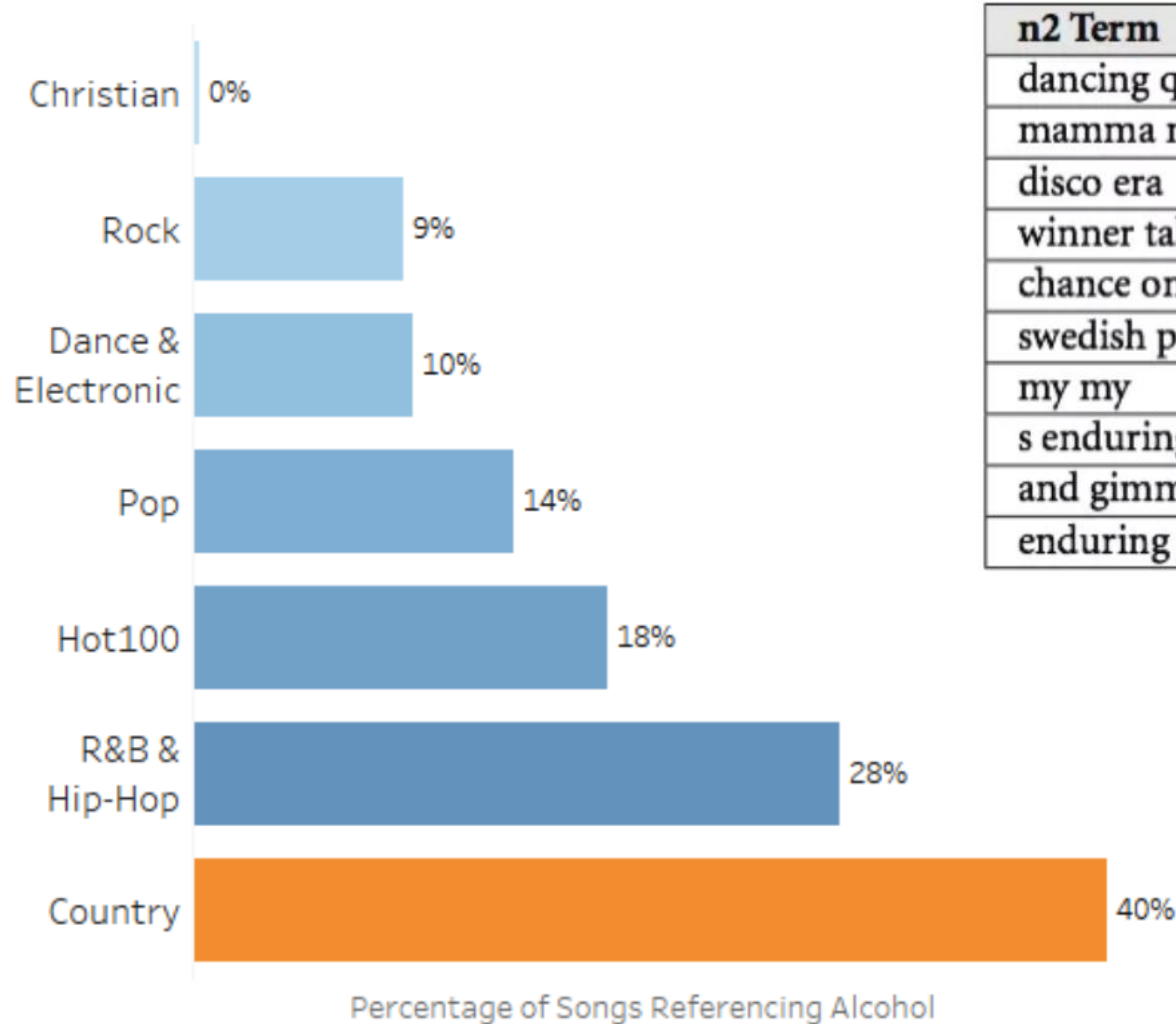
Natural Language Processing (NLP)

of Unique Words Used in 500 Random Samples of 35,000 Lyrics from Country, Rock, Hip Hop



Raw Lyrics Data via [John W. Miller](#)

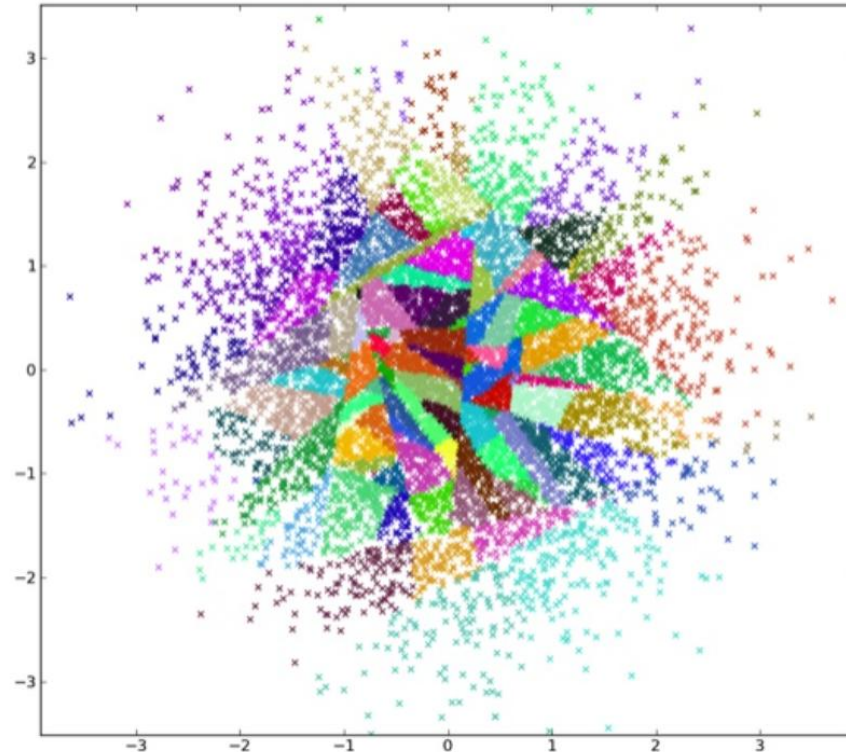
Natural Language Processing (NLP)



n2 Term	Score	np Term	Score	adj Term	Score
dancing queen	0.0707	dancing queen	0.0875	perky	0.8157
mamma mia	0.0622	mamma mia	0.0553	nonviolent	0.7178
disco era	0.0346	benny	0.0399	swedish	0.2991
winner takes	0.0307	chess	0.0390	international	0.2010
chance on	0.0297	its chorus	0.0389	inner	0.1776
swedish pop	0.0296	vous	0.0382	consistent	0.1508
my my	0.0290	the invitations	0.0377	bitter	0.0871
s enduring	0.0287	voulez	0.0377	classified	0.0735
and gimme	0.0280	something's	0.0374	junior	0.0664
enduring appeal	0.0280	priscilla	0.0369	produced	0.0616

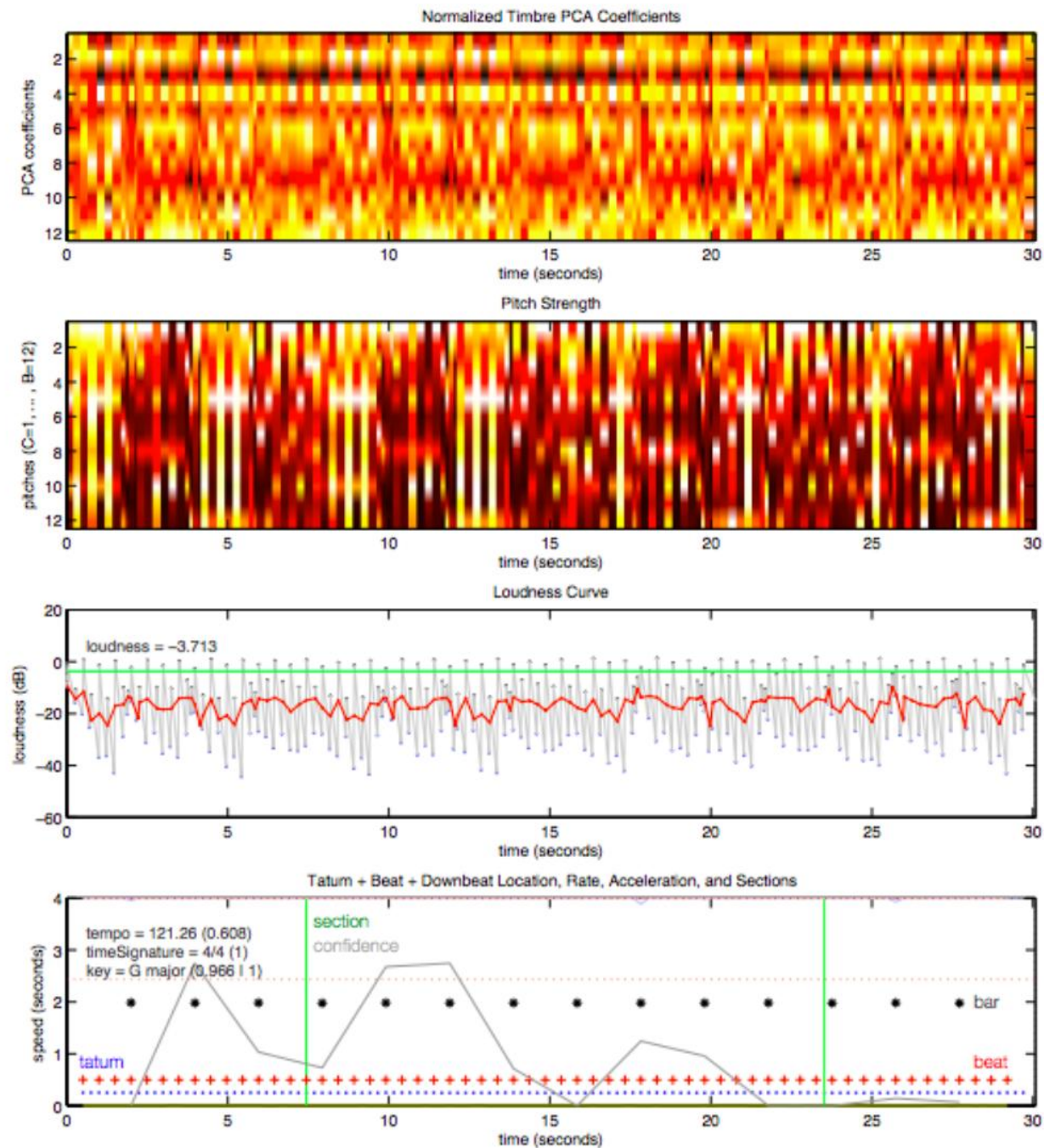
Natural Language Processing (NLP)

Approximate Nearest Neighbors

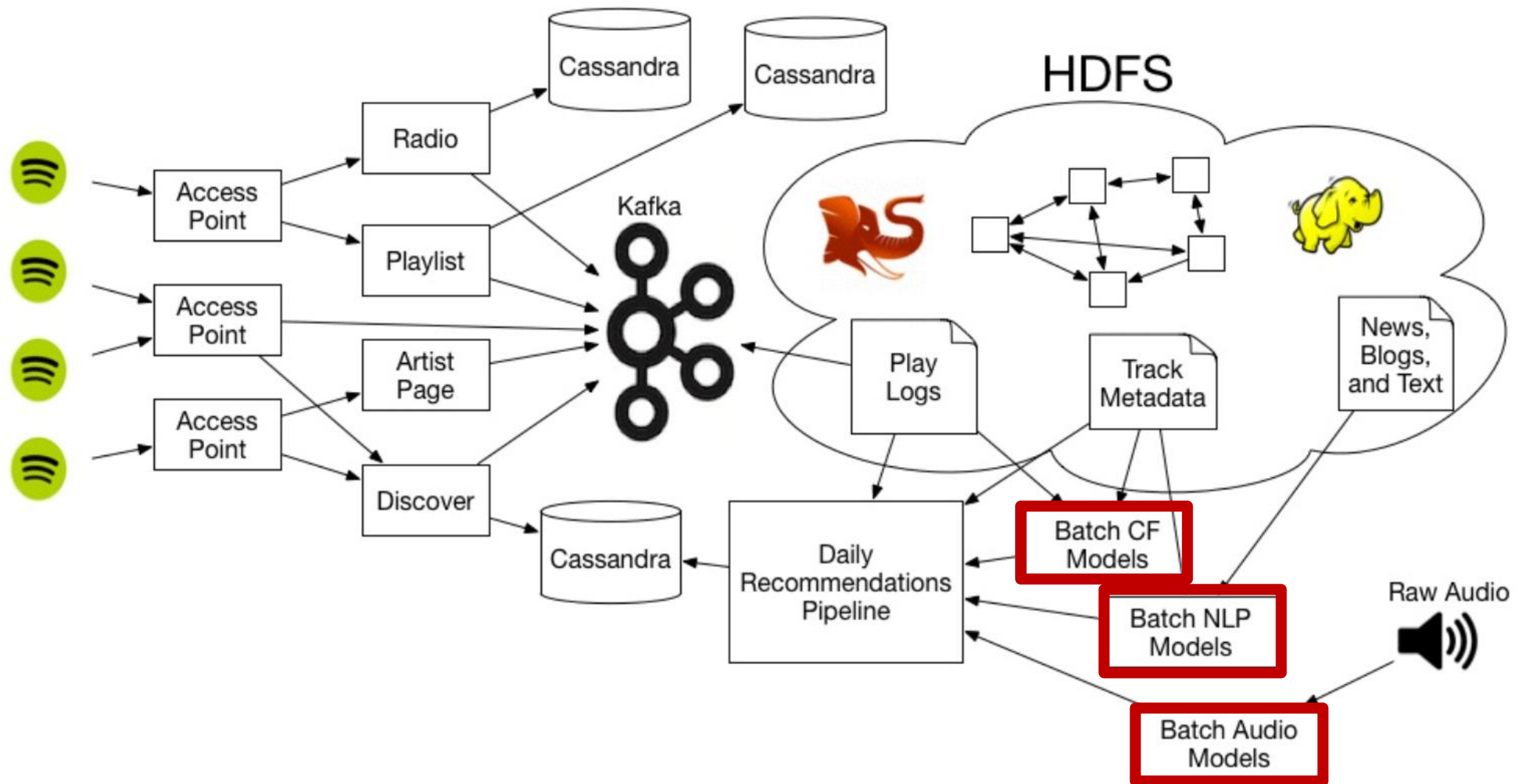


code: <https://github.com/Spotify/annoy>

Audio models



3 modèles de recommandation



Acte 2

Le festival est très soucieux de son image et fait de plus en plus l'objet de polémiques sur la diversité de son line-up, son impact environnemental, ses sponsors, ... Il désire analyser les contenus des réseaux sociaux pour adapter sa communication.

Quelles solutions envisagez-vous pour aider le festival?

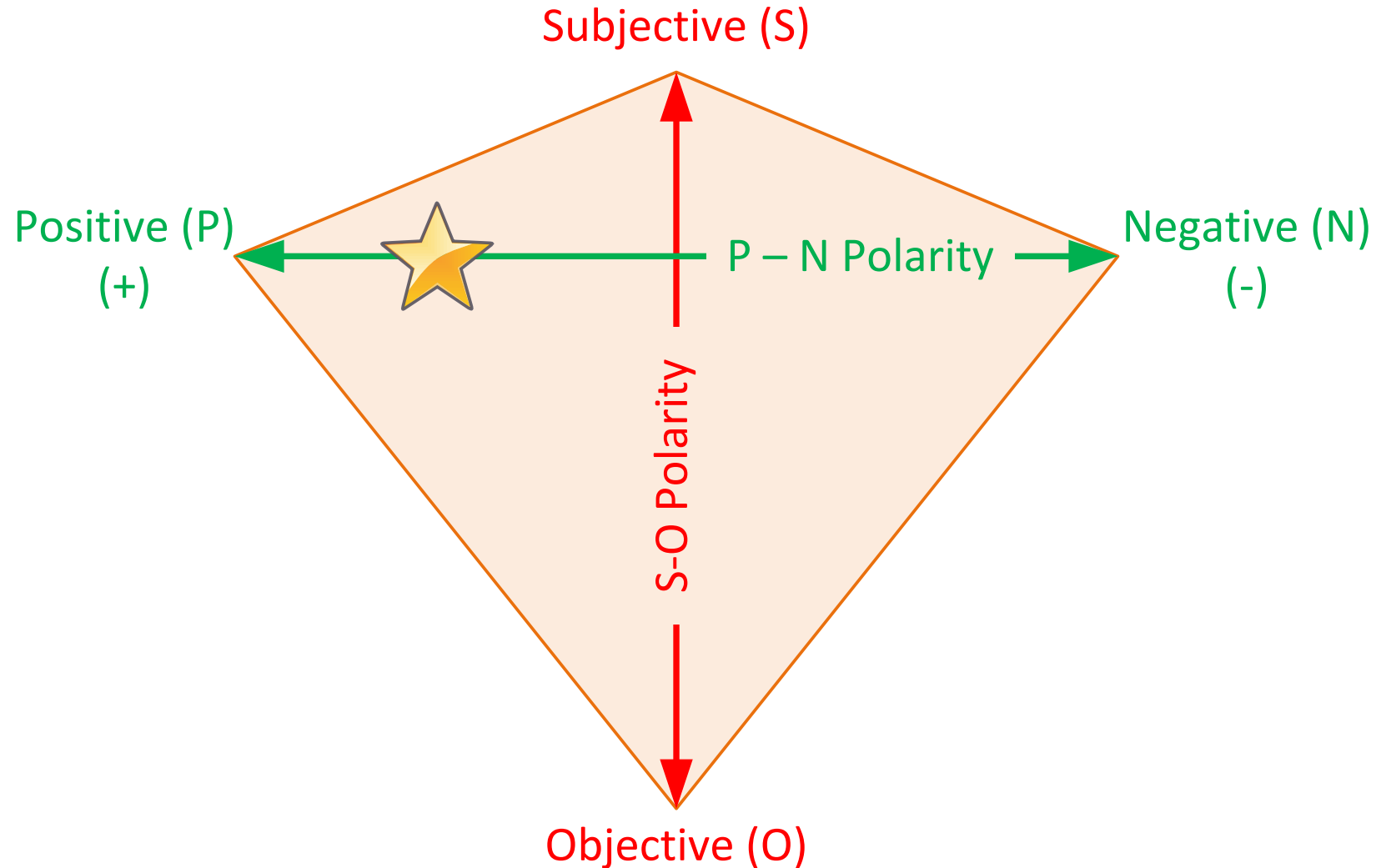


Classer chaque Tweet dans une des trois catégories:
positif, **négatif**, ou **neutre**

The closest I'll ever get to the feeling of defusing a bomb is waiting on the standby page for Coachella tickets.
#Coachella2019
user : *RaphNasty* / retweets : 3 / tweet_id : 17607-M-357

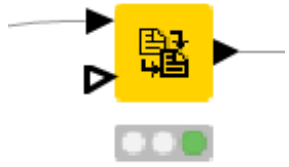


P-N Polarity and S-O Polarity



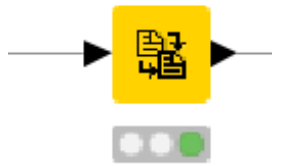
Préparer le document texte

Stop Word Filter



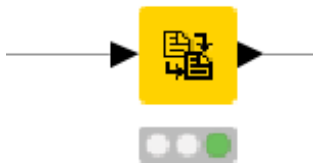
Filters all terms of the input documents, which are contained in the English stop word list.

Case Converter



Converts all terms contained in the input documents to lower case.

Snowball Stemmer



Stems terms contained in the input documents with the Snowball stemming library.

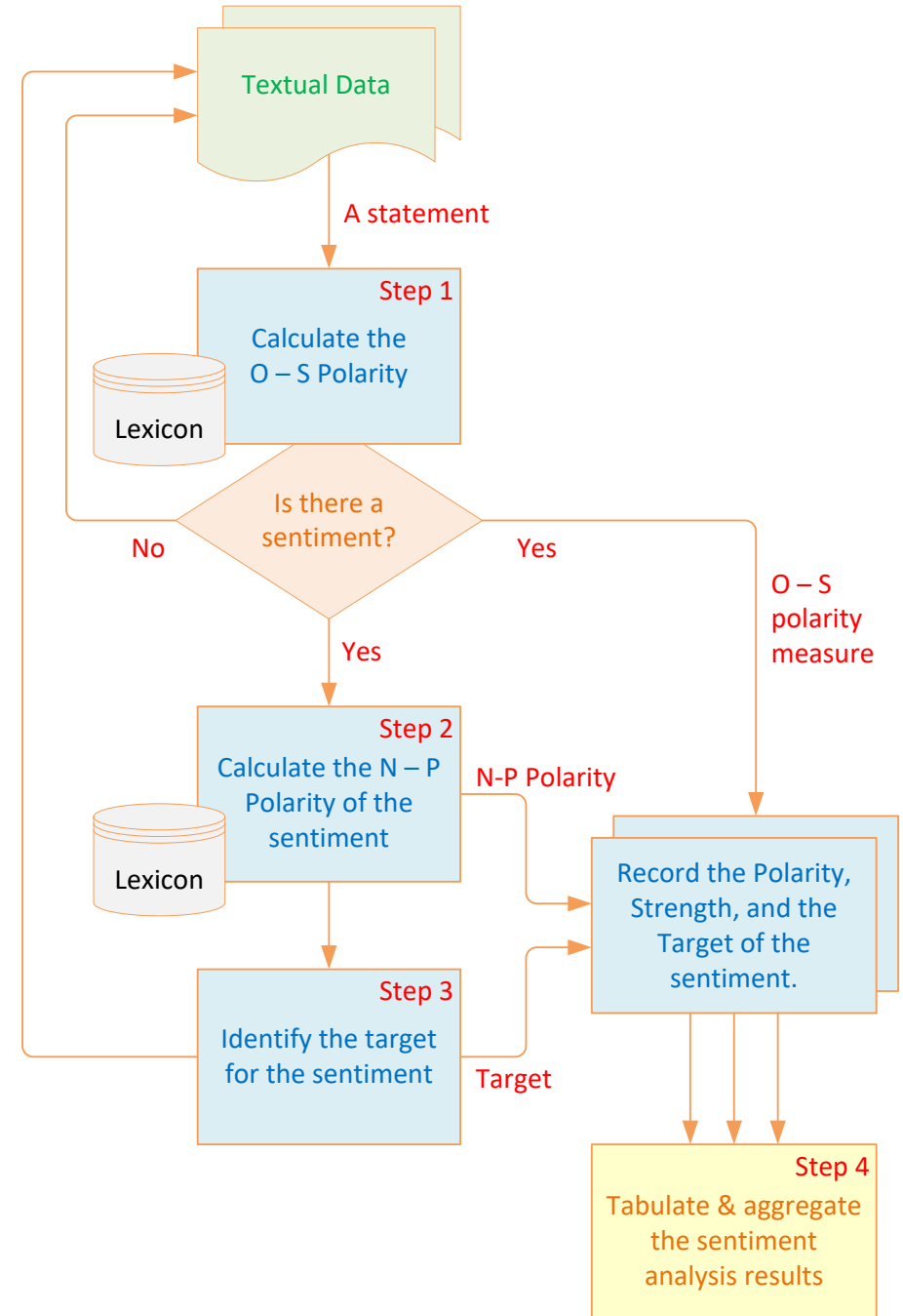
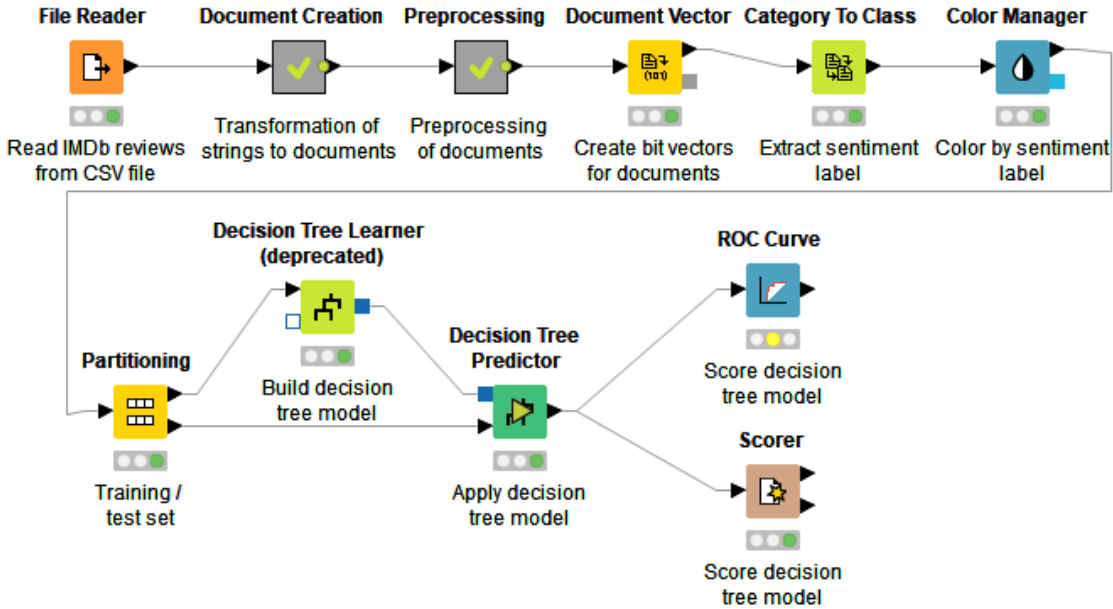
Great Italian Food Served Italian People
sign going have authentic Italian food is restaurant is run happy
Italian people

Italian Food Served Italian People
sign authentic Italian food restaurant run happy Italian people

italian food served italian people
sign authentic italian food restaurant run happy italian people

italian food serv italian peopl
sign authent italian food restaur run happi italian peopl

Sentiment Analysis Process



Sources

<https://www.slideshare.net/MrChrisJohnson/scala-data-pipelines-for-music-recommendations>

<https://www.slideshare.net/MrChrisJohnson/algorithmic-music-recommendations-at-spotify>

<https://towardsdatascience.com/how-spotify-recommends-your-new-favorite-artist-8c1850512af0>

Contact

cedric.gaspoz@hes-so.ch