

AI Applied to Public Security and Organized Crime detection

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The Central Service of Criminal Intelligence (SCRC)



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Data Science Department



- 8 people (data scientists) - PhD, MS, Eng.
- Development of software applications for criminal intelligence analysis
- Control over the code, open source development
- Model as a small research lab, or startup



Four european projects



Academic partners



Increase in the available data

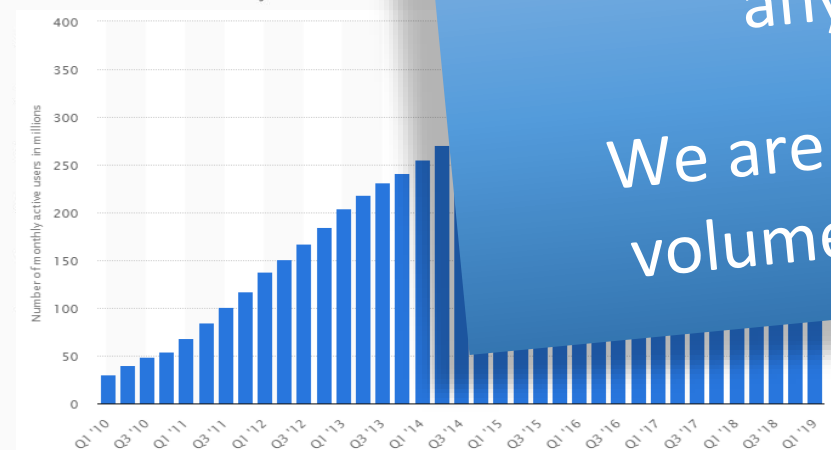


- Exponential increase in available data
 - Steady tendency
- Traditional methods are not applicable anymore
 - We need new methods and tools

The problems are not technological anymore they are human.

We are just not capable to treat the volume of data available anymore!

Twitter's worldwide monthly active users



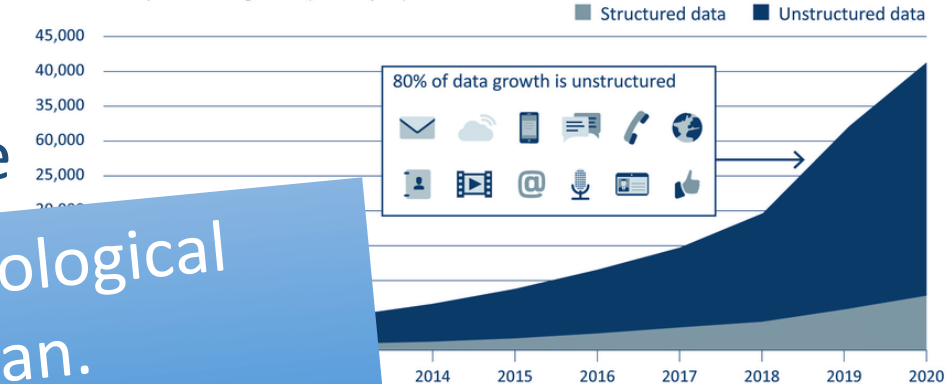
@StatistaCharts Source: Twitter

statista



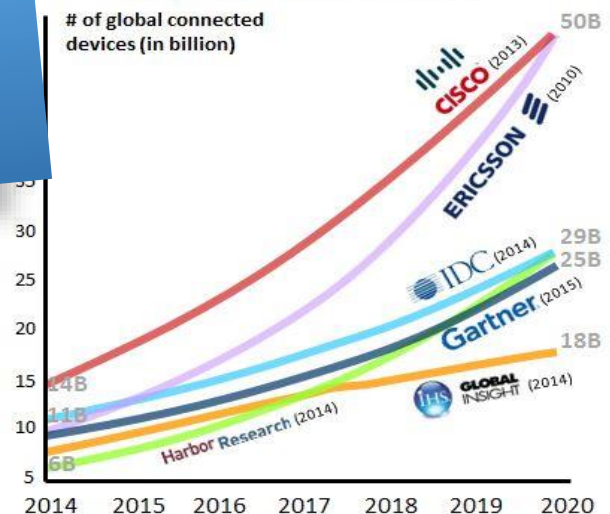
Massive growth in unstructured content

Worldwide corporate data growth (in exabytes)



Global IoT Device Forecasts

of global connected devices (in billion)



(Source: research companies' analysis reports, Sep. 2015)

AI and the Intelligence cycle





Examples of actions where AI could perform a crucial role!



The right information at the right time

-  - Automatic alerts
-  - Suggest distribution channels



Which tools can help to solve the present case/problem

-  - Big data visualization
-  - Detection of pertinent relations




Research plan

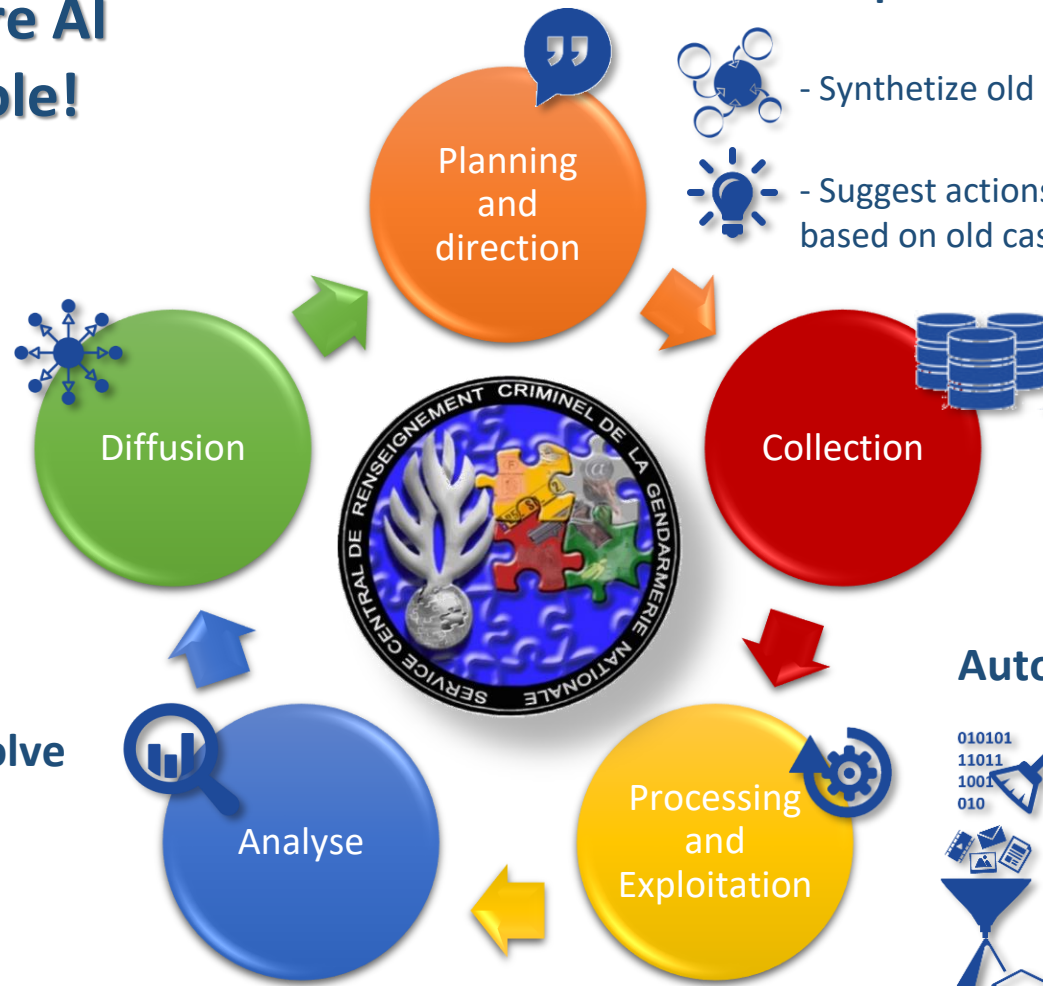
-  - Synthetize old patterns
-  - Suggest actions and resources based on old cases

Decide what is a worthy data

-  - What should be collected and in which context?
-  - What is the source reliability?

Automatic data treatment

-  - Data Cleaning
-  - Fusion
-  - Detection and transformation



Generic AI model

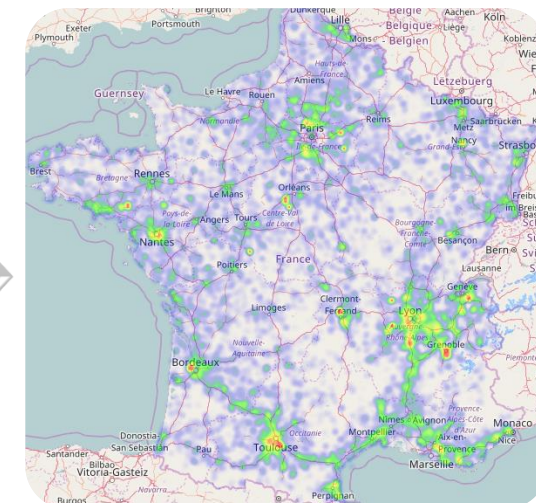
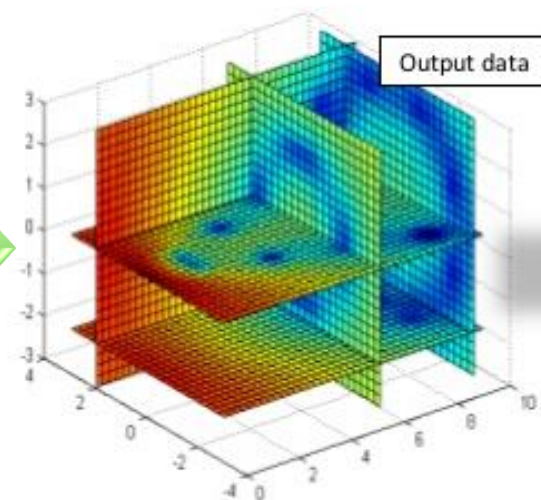


Inputs

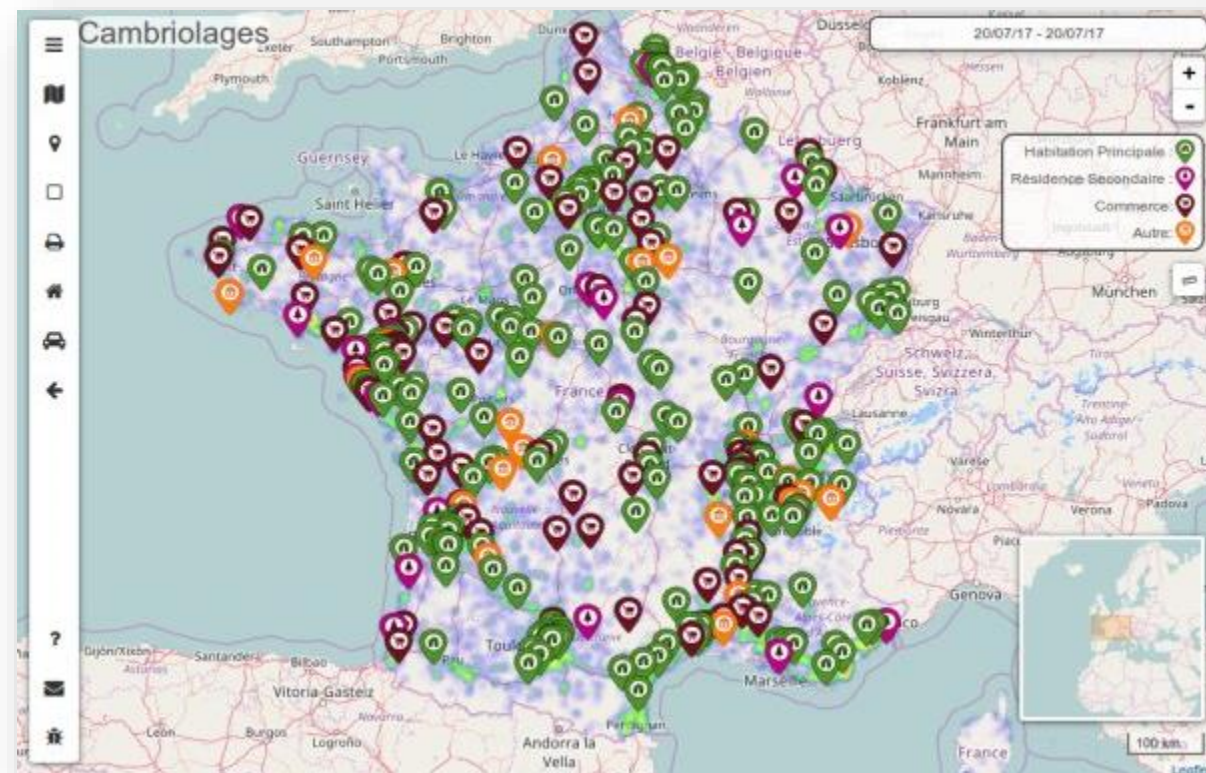
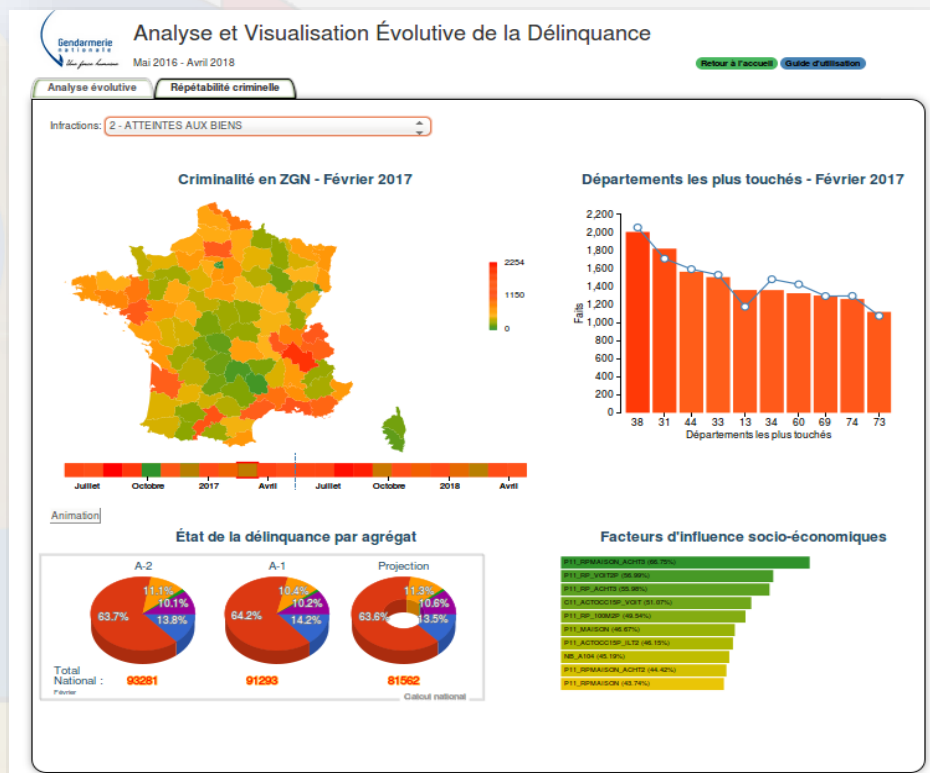
Historical data

Mathematical model

Forecast



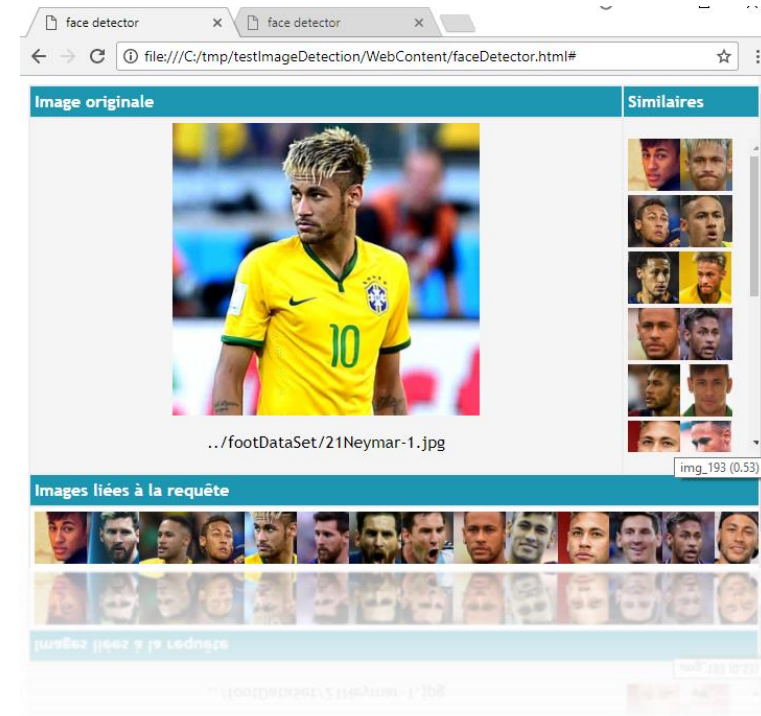
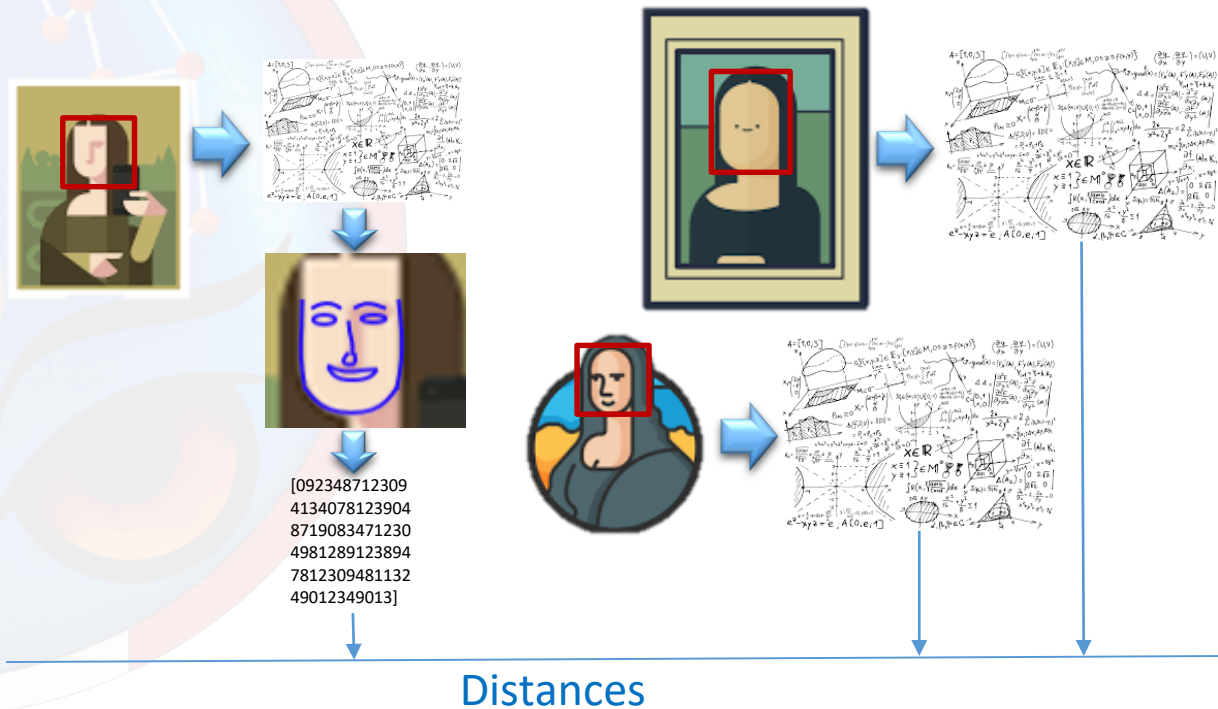
Criminality Forecasting



Facial Recognition



- Automatic detection of faces over images and videos
- Correlation with known individuals



Named entity and link detection



- Provide some organization to unstructured content
 - Handle content from diverse sources
- Categorization and content discovery

Entity labels (select all)

☒ PER ☒ ORG ☒ GPE ☒ ADDRESS ☒ LOC ☒ POI ☒ PROFESSION ☒ NORP ☒ TIME ☒ DATE ☒ PERIOD

☒ MONEY ☒ WEAPON ☒ CRIME ☒ CELM ☒ WEB ☒ EVENT ☒ DRUG

Save

Request annotation

Next

Train Model

Prev

1198 en date du 08/11/2017 DATE Complément message(s) : Objet [redacted] 2017 - Fin de garde à vue Stéphane [redacted] PER

Références Avis de placement en garde à vue n° [redacted] / Identité personne gardée à vue Le 08/11/2017 DATE à 11:30 TIME , il est mis fin à la

garde à vue de Stéphane [redacted] PER né le 10/07/1972 DATE à THIONVILLE 57100 GPE (France GPE) dont il fait l'objet depuis le

07/11/2017 DATE à 13:40 TIME 2/ Destination donnée Fait l'objet d'un convocation par OPJ pour le 19/03/2018 DATE 3/

Magistrat PROFESSION informé Mme [redacted] PER , Vice procureur de la République PROFESSION à THIONVILLE 57100 GPE 4/ Divers

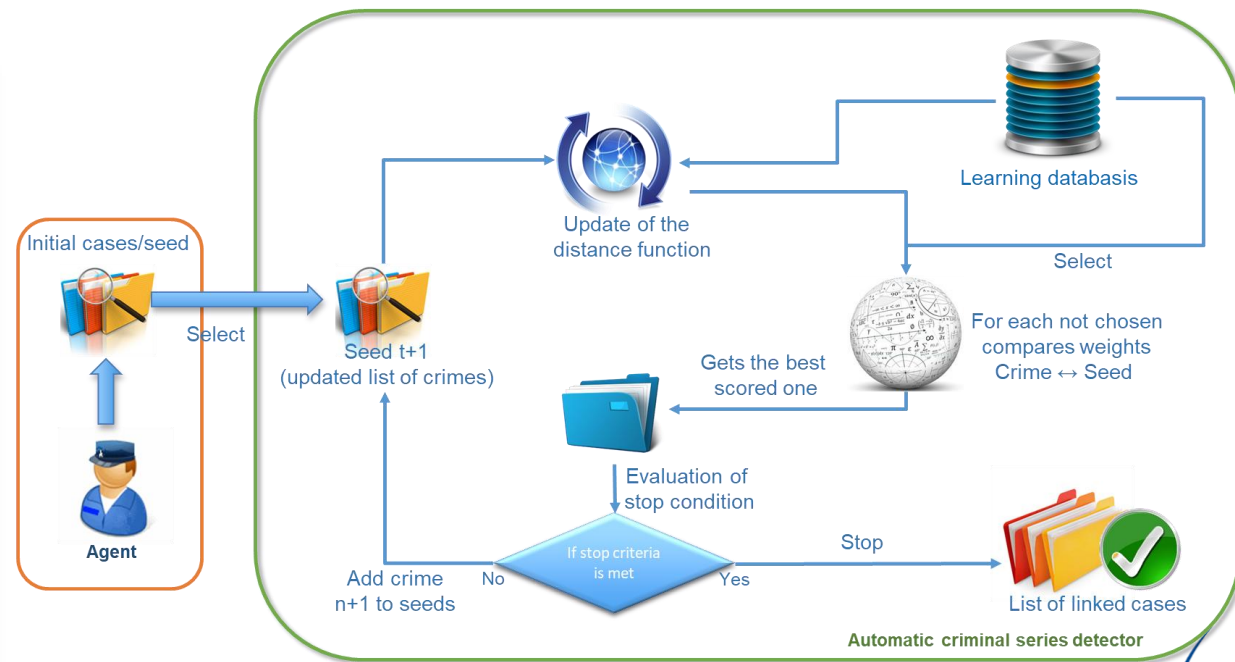
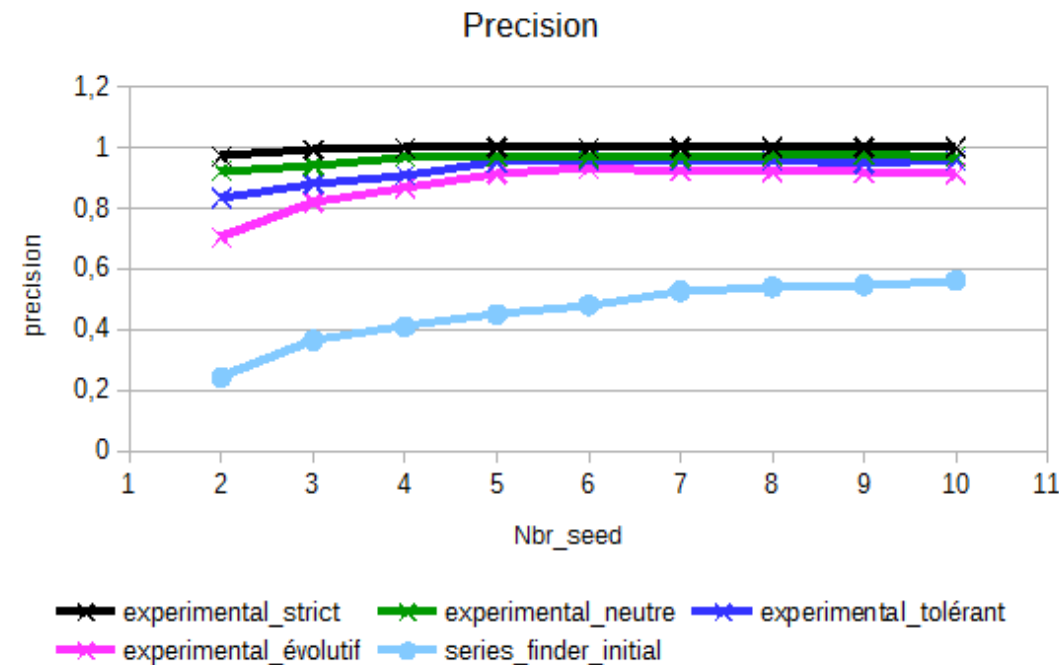
- Repas aux frais de l'état : Oui - Photos réalisées : Oui - Relevé Déca : Oui - Prélèvement ADN : Non - Consultation FPR : Oui O.P.J responsable de la

Garde à Vue [redacted] PER Officier de Police Judiciaire en résidence à RETTEL [redacted] 2017

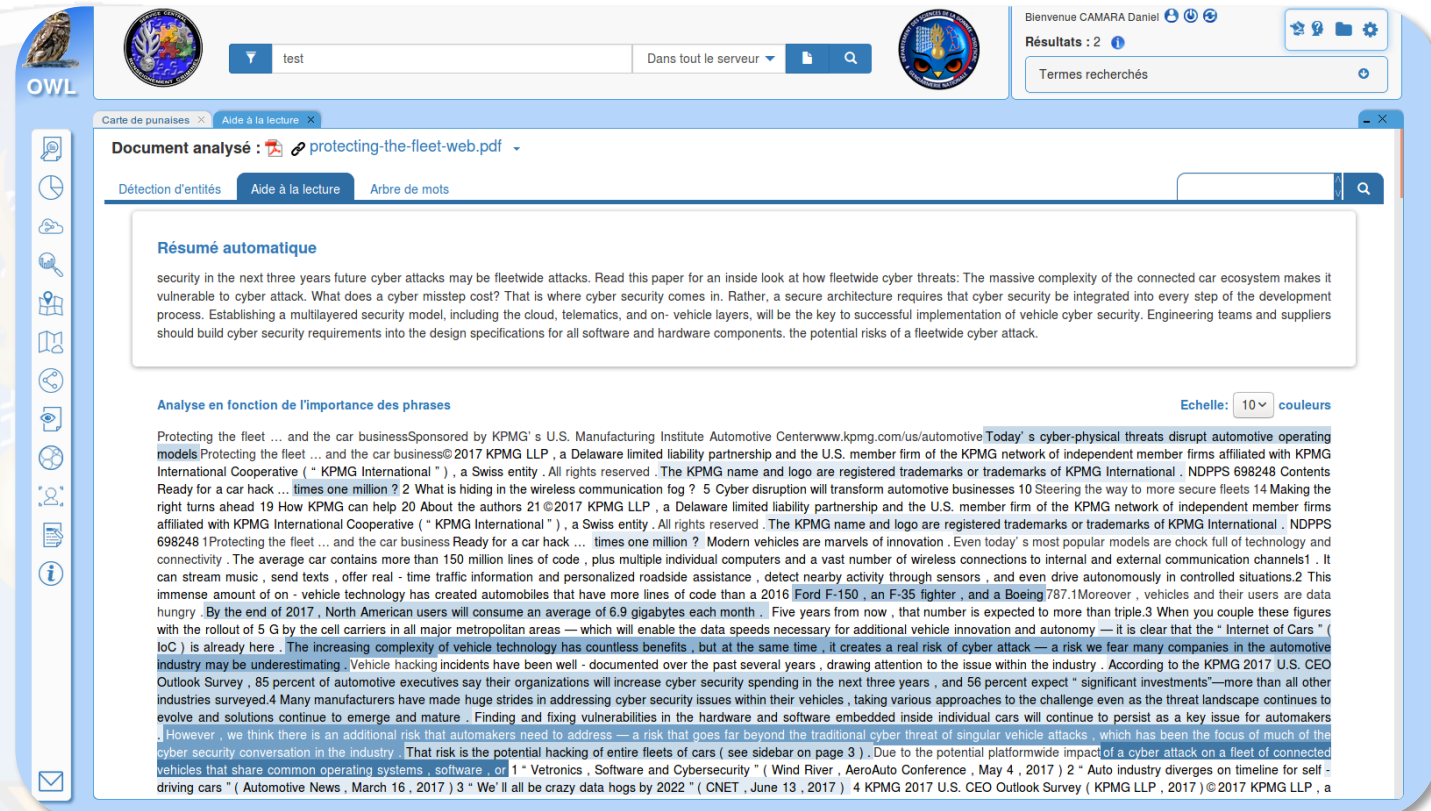
Criminality patterns and seriality



- Detect criminal series automatically and as fast as possible
- Link unsolved cases to criminals or criminal groups

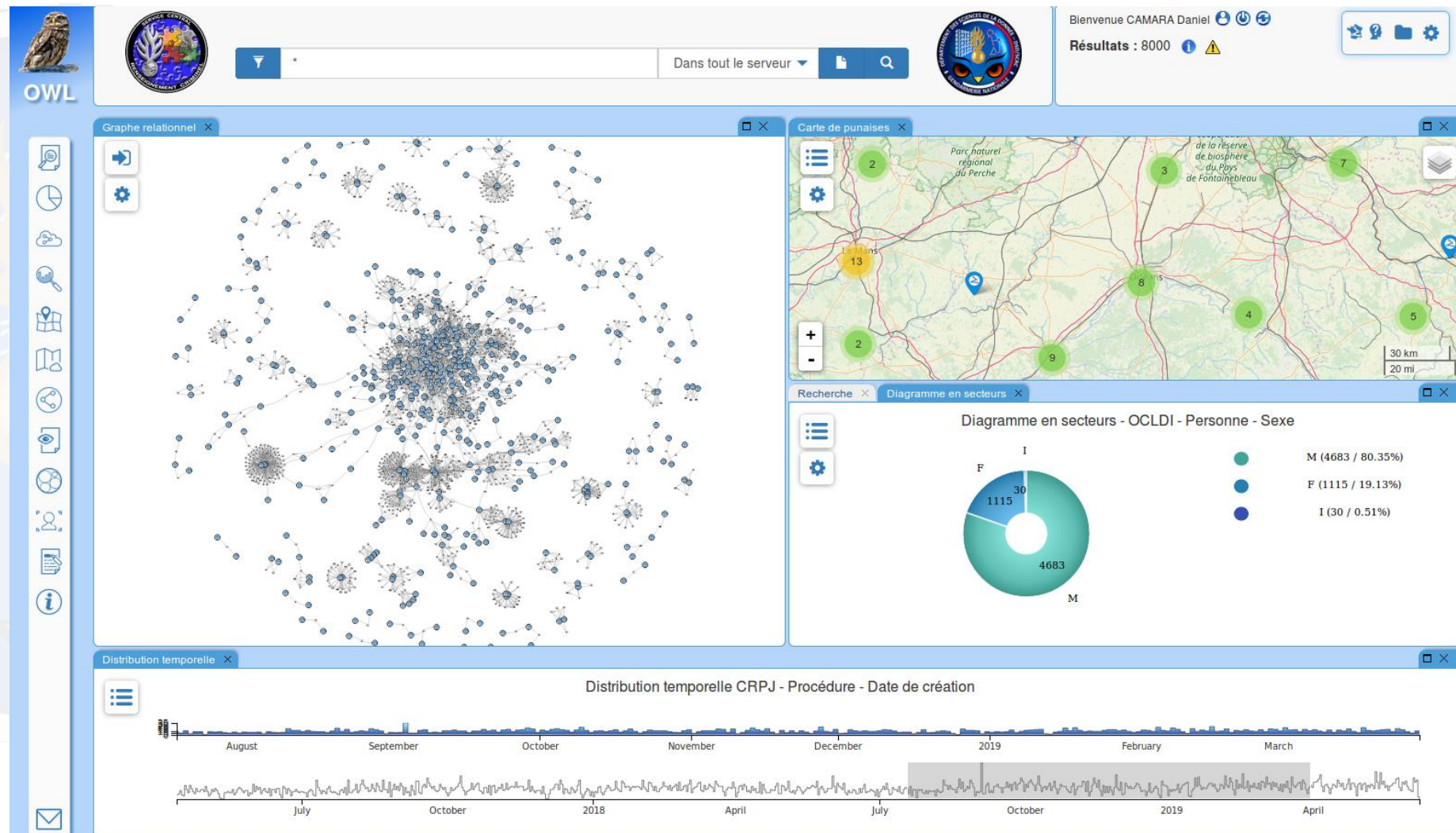


Automatic text tagging and abstract creation



- High volume of documents
- Simplify data assessment
 - Decrease time to assess the importance of a document
- Easy document classification

OWL



- Tool for big data treatment and information discovery
- Register and analysis of criminal activities and relations

Thank you for your attention!

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