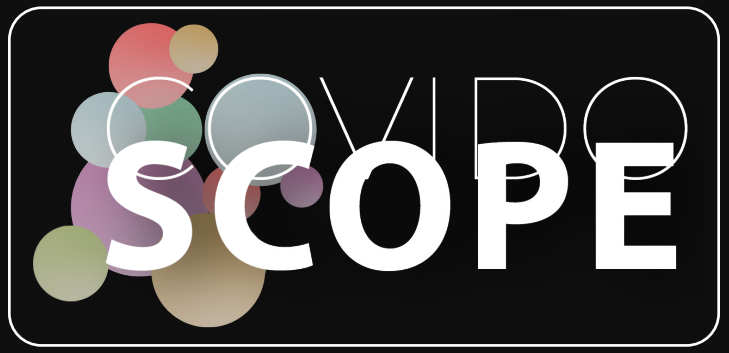


DATA DESIGN • PROJECT PRESENTATION

IMAC ENGINEERING PROGRAM - UNIVERSITÉ GUSTAVE EIFFEL
LAURINE **CAPDEVILLE** • KOKRI **DAGO** • THÉO **DAUPHIN** • STERENN **FONSECA**

PROJECT SUMMARY

The «fake news» term has really taken all its meaning during the harsh 2017 presidential campaign. Today, it has become the plague of society, if most of the time it seems obvious, it becomes increasingly difficult to recognize it. But whose fault it is?
Social networks are so much a part of our lives, that false information can spread all over the planet. Our will to share everything fast is against our critical mind and verification of information. Fake news can reach millions of people who have full confidence in the people they follow and the number of likes.
During today's global health crisis many questions are raised but few answers are given: fake news has exploded. That is why we decided to work on CovidoScope to offer Internet users tools to become aware of the misinformation around covid-19. For this purpose, we use the analysis of true and fake tweets. We are convinced that such a project has its place in the «Viral Complexity» challenge for which we are applying for.

Proof of Concept :

https://bit.ly/34wxUEi

INNOVATION

· OVERALL PROJECT IDEA AND OBJECTIVES

With CovidoScope, we want to provide the user and the wider world with the so-called «silent» characteristics of tweets dealing with the Covid-19 epidemic.
As Rumor Gauge research is complex, we decided to focus on features that are easy to obtain but offer the most meaningful information possible. The goal is not to create a tool to determine if a tweet is true or not, but rather to offer a galaxy of tweets about the pandemic and leave it to the user to analyze the impact of fake news versus lambdas tweets.

Thus, we decided to use the «Covid-19 Misinformation» dataset by Shahan Ali Memon and Kathleen M. Carley, offering a selection of 4574 Tweets posted between January and August 2020 by people living in the United States. Each post was analyzed and classified in no less than 17 categories (e.g. fake news, politics, fake treatment, true prevention, etc). The existence of these categories opens different possibilities of exploitation.

We then decided to represent the number of retweets per category as a function of time with its geographical parameters and its statistics, which would allow us to have a first overview of the temporal dynamics of the diffusion of true, false or ambiguous tweets (because everything is not black or white).

INNOVATION

· OVERALL PROJECT IDEA AND OBJECTIVES

Representing data from 17 different categories can be a bit tricky. So we decided to group them into 6 main categories as follows:

Conspiracy	True information	Fake information
Conspiracy	True Treatment True Prevention True Public Health Response	Fake Cure Fake Treatment False fact or Prevention False Public Health Response

Positive reaction	Negative reaction	Other
Correction/ Calling Out Emergency Response	Panic Buying	Irrelevant Sarcasm/Satire Ambiguous Politics Commercial Activity News

https://zenodo.org/record/4024154#.X6UhtXWYXRY

· RELEVANCE TO THE CALL

Our project is totally in accordance with the Media Futures call for projects «Viral Complexity» as we want to create a platform showing how citizens are confronted and react to information and misinformation about covid.

In order to do that, we are relying on Twitter, one of the most popular social networks in the world.
Twitter is heavily used for sharing ideas with everyone on the planet. It has been in the news during the epidemic because of the ease with which fake news is spread.

First of all, we wanted to benchmark other projects related to covid-19 but also those dealing with a large flow of information in order to study their different graphic representations.

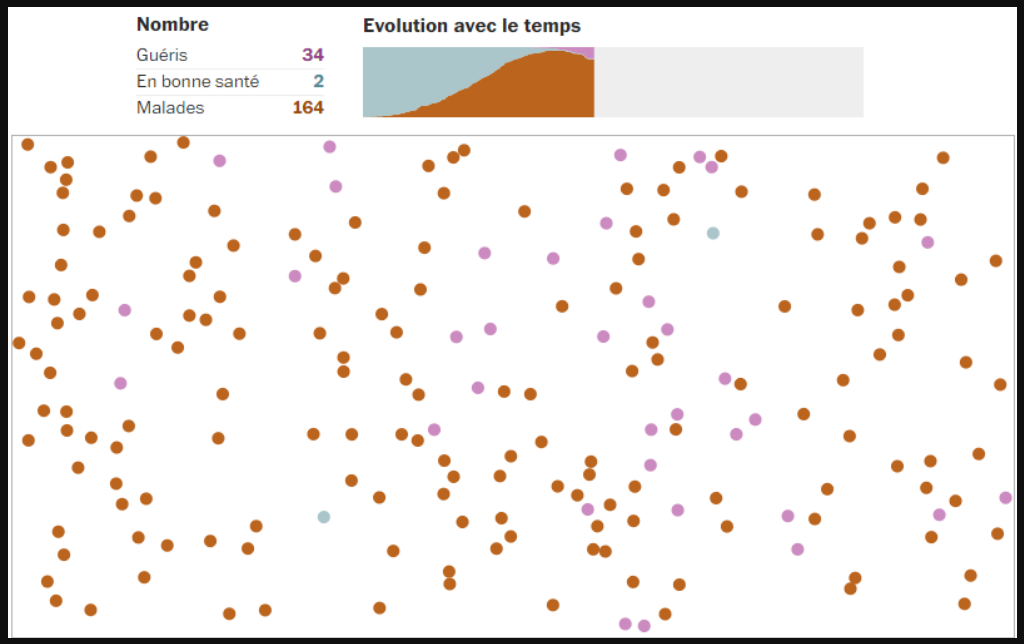
You will find our conclusions in the following benchmark.

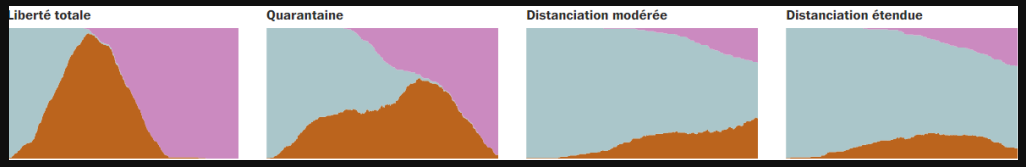
INNOVATION

· BENCHMARK

PROJECT #1
Name: *Why outbreaks like coronavirus spread exponentially, and how to "flatten the curve"*
Author: *Washington Post*
URL: *Click Here*

A covid simulator showing the transmission of the virus. This is not related to the tweets but it is one of the few data visualization projects on COVID-19. All the representations are included in an article.





What we are keeping in mind :
— double representation (charts and points)
— small amount of text
— color visualization
— use of animations to increase/illustrate an item
— dynamic

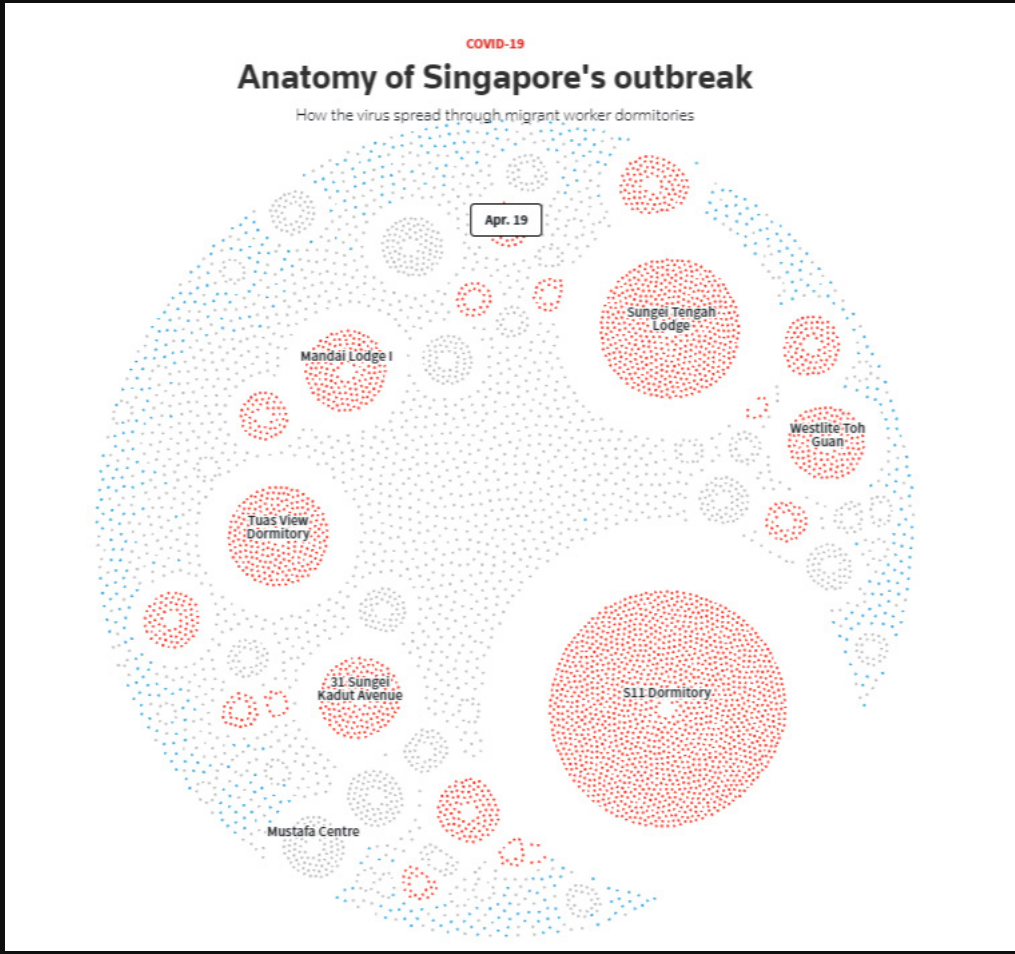
INNOVATION

· BENCHMARK

PROJECT #2
Name: *Anatomy of Singapore's outbreak*
Author: *Manas Sharma and Simon Scarr*
URL: *Click Here*

Representation of the virus propagation/cluster system.

What we are keeping in mind :
— representation of quantity by individual elements arranged in a meaningful way in space
— provision of additional information through color
— uncluttered and fluid representation



INNOVATION

· BENCHMARK

PROJECT #3
Name: *New York Times: How the Virus Got Out*
Author: *Jin Wu, Weiyi Cai, Derek Watkins and James Glanz*
URL: *Click Here*

Visual representation of the stages of propagation of the virus from Singapore. The whole project is on a site where the scroll leads to the rest of the animation.

What we are keeping in mind :
— representation of quantity by individual elements arranged in a meaningful way in space
— association of quantity / geographical elements
— dynamic
— shade of gray and a primary color that highlights the information

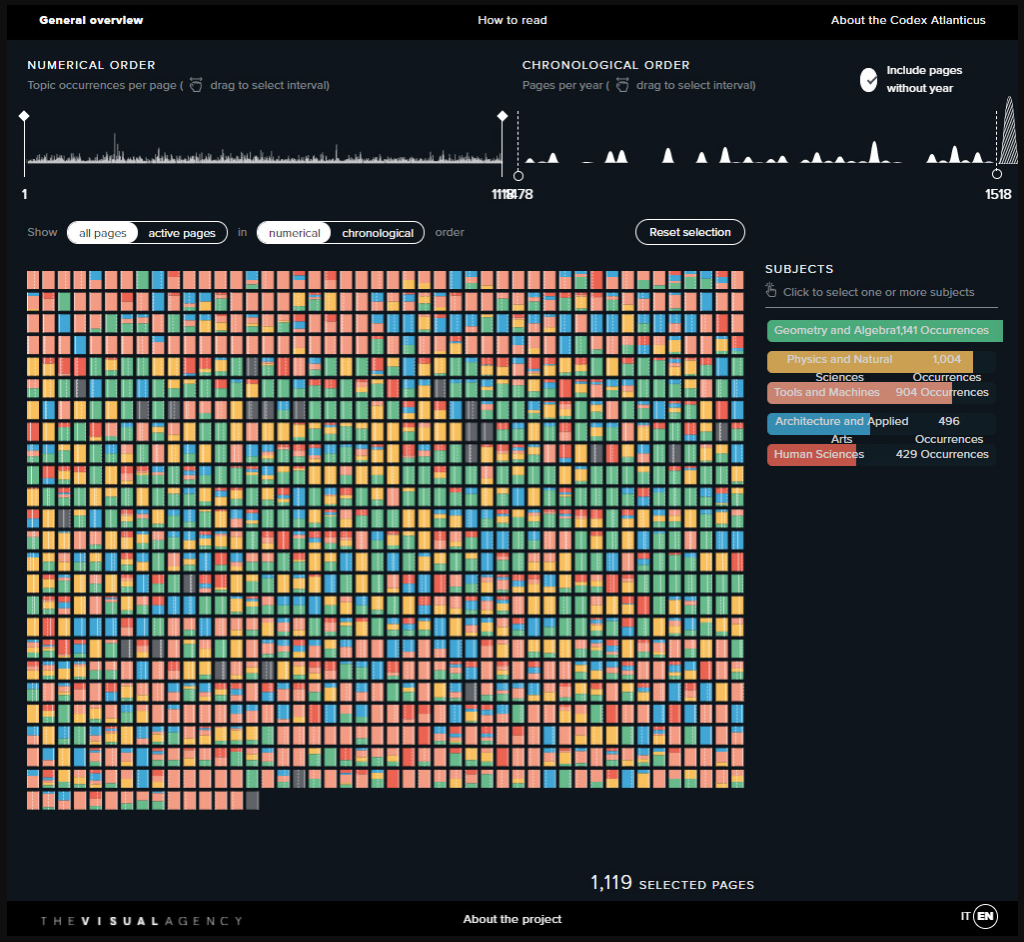
INNOVATION

· BENCHMARK

PROJECT #4
Name: *Codex Atlanticus*
Author: *The Visual Agency*
URL: *Click Here*

Once again, we open our search to find projects that match: timeframe, category, size. This is not an article, it is an interactive platform where clicks lead to other pages. Here, books are represented in a rectangle with several colors (the categories). By choosing a time range, the graph updates to illuminate the books that meet the time sort. There is also a representation of the number of books according to the period. Clicking on it we access to the cover. Possibility of filtering, etc.

What we are keeping in mind :
— pretty inspiring and we can immediately draw a parallel with our categories and the display of tweets, we could do a filtering by number of retweets too
— relatively simple graphically speaking and effective
— no scroll to allow a global view



INNOVATION

· BENCHMARK CONCLUSION

Following the study of visual representation of data, we can see what works and what does not.

What we are keeping in mind :
— *clean design*
— *limited number of colors*
— *harmonious color palette, each color represents a category*
— *little text*
— *dynamic and clickable data*
— *trend-revealing graphics*
— *scroll interaction*
— *black background to highlight information*

· OUTCOMES

One of the aims of the «Viral Complexity» challenge was to show how citizens perceive information and interact with misinformation around the coronavirus epidemic. The CovidoScope project fits perfectly in this framework, our platform allows users to be confronted with false information and to see the impact of these.

On the long term, one of the results we would like to obtain would be to make the platform work like a vaccine. Thus, by inoculating people with false information (knowingly), a person will easily know what is true and what is false. In the same way, we could implement an artificial intelligence, also capable of determining a level of trust/plausibility. It would then be possible for the user to provide a tweet and let the platform analyze it.

Other results:
— Analysis of user interaction with false information.
— Representation of the birth and lifespan of a fake news.

By creating a platform entirely dedicated to tweets dealing with covid-19, we want to raise awareness about misinformation.

PROJECT
DESIGN

· STYLE GUIDE

Title 1 · Montserrat Regular · 29 pt

Title 2 · Montserrat Semi-Bold · 22 pt

Paragraph · Montserrat Regular · 14 pt

Button · Montserrat Medium · 12 pt

Twitter Profile · Montserrat Regular · 11 pt

Tweet Text · Montserrat Regular · 9 pt

Tweet Statistics 1 · Montserrat Regular · 7 pt

Tweet Statistics 2 · Montserrat Bold · 14 pt

#AABDC0
#C0C8C9

#B27DA4
#B79AB1

#7DAF91
#96BCA4

#A4AD7D
#B6B79E

#BC9F6C
#C4B49D

#D86C6C
#D69D9D

#0F0F0F

PROJECT DESIGN

· USE OF DATA

SHAPE

Single-Tweet Display

SIZE

Depending the number of retweets

COLOR

Depending the tweet category

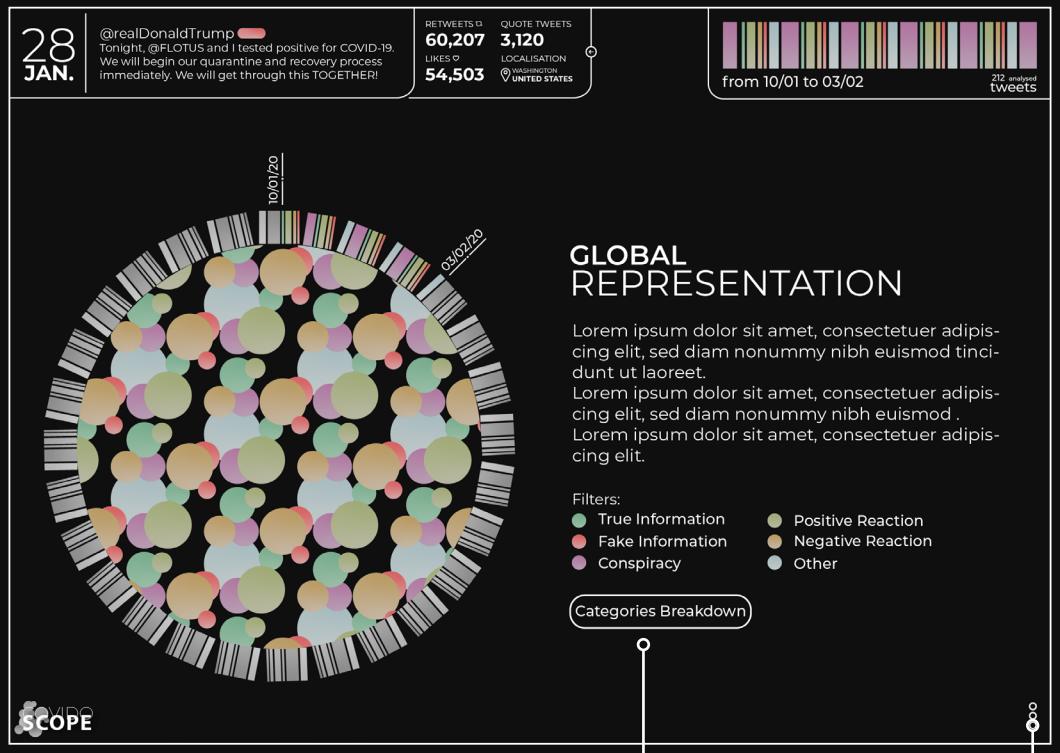
- Other
- Conspiracy
- True Information
- Fake Information
- Positive Reaction
- Negative Reaction

PROJECT DESIGN

· DESIGN PROPOSAL

Information panel on the selected Tweet

Representation of Tweets within a cell and daily trend around



Tweets Timeline
Number of analysed tweets

Project Presentation

Possibility to choose the categories of Tweets to display

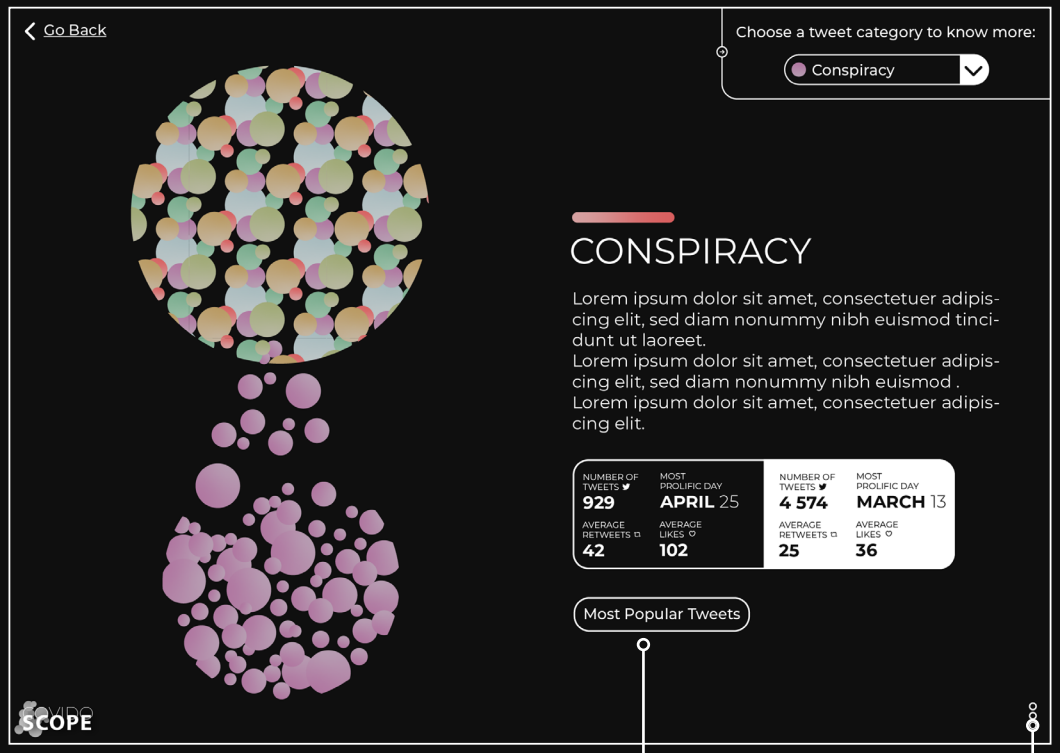
Opens the «About» modal

Click to access second page

PROJECT DESIGN

· DESIGN PROPOSAL

Representation of the Tweets of the selected category



Dropdown to choose the category to display

Description of the category and the approach to classification

Statistics Comparison: Category vs. Full Dataset

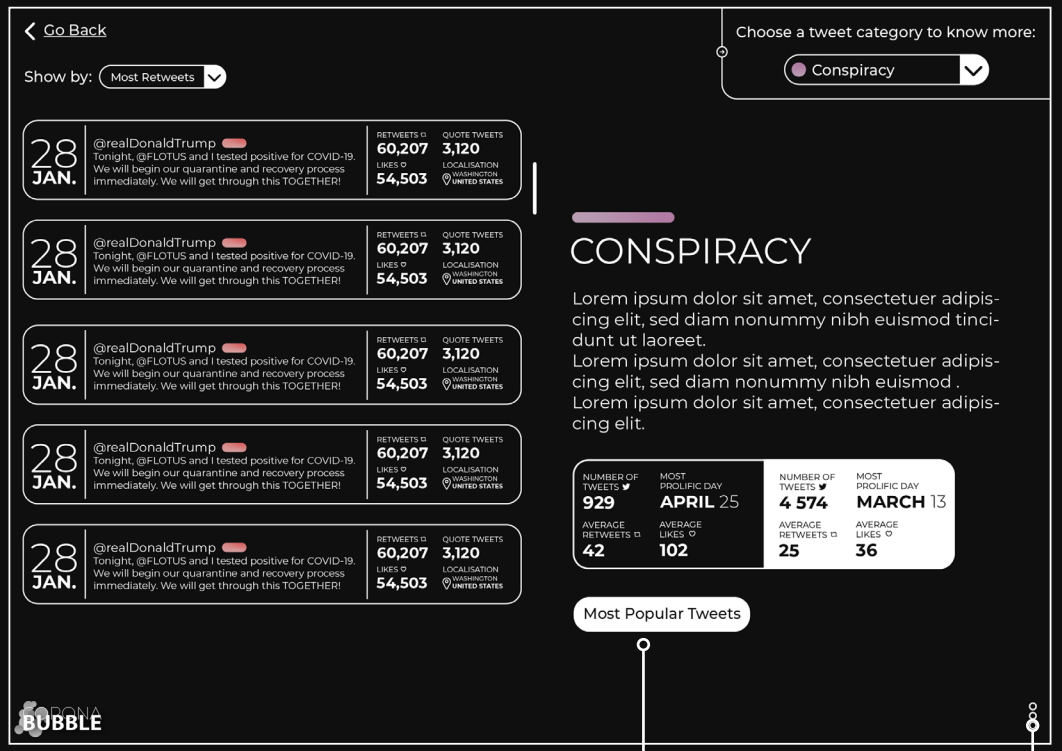
Opens the «About» modal

Displays the most popular tweets of this category

PROJECT DESIGN

· DESIGN PROPOSAL

Most Popular Tweets of the Selected Category



Dropdown to choose the category to display

Description of the category and the approach to classification

Statistics Comparison: Category vs. Full Dataset

Opens the «About» modal

Close the «Most Popular Tweets» Window

PROJECT DESIGN

· IMPLEMENTATION & TECHNOLOGY

To implement CovidoScope and create a first functional Proof of Concept, we decided to use P5.js. This programming language inspired by Processing is widely used in the world of data design for its light and simple approach. Moreover, we can easily integrate calls to the Twitter API in our code and thus fully exploit the data and information of each Tweet.

Moreover, P5.js fits perfectly with our idea of full screen. Indeed, our sketch represents a board where we drop all the information for a global visualization. Using this language also allows us to make web page renderings without the need of a base, it is an interesting way to create prototypes. Thus our code is accessible and easily modifiable.

IMPACT

· ARTISTIC IMPACT

In the form of a dashboard, our project proposes a new way to navigate through the Twitter newsfeed and reveal the truth from the false. The dark theme highlights the colored tweets gathered in the form of globular clusters to echo the coronavirus. It would be the first artistic approach that highlights fake news.

The dynamic representation innovates the static aspect of the Tweet. This movement is like the interactions of a user on it.

Talking about words by words: the user path proposes descriptions to talk about the different types of content encountered in the Tweets.

The user is invited to read to base his conclusion.

The schematic representation allows a universal understanding, they are simple and common forms organized to create an accessible and innovative ensemble.

IMPACT

· SOCIAL IMPACT

On Twitter, different identities and cultures coexist. This social and generational mix uses the same means of expression: the Tweet. It becomes impossible for a normal user to discern the veracity of his news feed. The user, under the effect of the scroll, passes quickly from tweet to tweet and ingests a lot of information. Without realizing it, this trivial action can have a real impact on his thoughts or his morale. So how can we protect ourselves?
Our project is part of a real solution that raises awareness and extracts misinformation focused on Covid-19. The Covid-19 pandemic has led to a parallel pandemic of misinformation that directly impacts the lives and livelihoods of thousands of people around the world. The lies and misinformation have proven deadly and their ability to confuse personal and political choices that help save lives has been evident. UN Secretary-General Antonio Guterres said of COVID-19 that «our enemy is also the growing amount of misinformation.».
On February 2, the World Health Organization described a «massive infodemia» as preventing access to reliable sources and information. The social impact here is to give a common tool and allow everyone to have the right to know the truth. Thus, the users who ask questions can have access to an answer as soon as they are interested. We tend towards equality in the face of misinformation which is a major priority today.

· SUSTAINABILITY

Our CovidoScope is thus part of a line of tools which aim is to restore or ensure the veracity of information.
The user navigates through false information with awareness like a vaccine: in small doses and at his own pace, he inoculates false information and unconsciously learns to observe how it is implemented.

In the long term, this tool is intended to be applicable to all social networks, over any period of time and especially with a continuous update to allow interactivity in the face of disinformation and to set up reflexes.

It would also be equipped with an artificial intelligence, also capable of determining a level of confidence and plausibility. Many extensions are possible, this «Proof Of Concept» is only a sample of the fight against information by making users responsible for the impact of a retweet, a like or a comment.

OUR TEAM

Our team is composed of four individuals with complementary skills and all with a multidisciplinary background.

Two gender-balanced poles have naturally formed around this project. The artistic pole on which Sterenn and Théo work includes the research and the creation of new visualization means, and the taking in charge of the artistic aspect of our communication supports.

Ésaïe and Laurine are in charge of the technical aspect of the project, including the development of tools and the rehydration of the dataset.

Our work is based on the observation of a global problematic on disinformation, problematic revealed and amplified by the coronavirus crisis.

Our research has allowed us to discover scientific works and innovations offering a partial answer to this problem, but whose visibility and exploitation by the general public have remained very limited.

Our goal is therefore to offer an easy and playful access to these innovations.

CONCLUSION

CovidoScope is part of the MediaFutures 1st Open Call «Viral Complexity» challenge which calls for projects responding to the context of coronavirus and misinformation.
It emphasizes the urgent need to involve and empower citizens with data skills. These are the key words that allowed us to imagine and design CovidoScope.
We offer a new way of understanding and raising awareness of the misinformation that exists on Twitter around Covid-19.

Through a simple, playful but effective interaction, users have access to the truth and can make their own analysis of the true and false. Our project has an important margin of progression, it adapts to all types of sources (social networks, press, streaming platform, podcasts, etc.), that's why we did not include the word Tweet in its title.

Innovative and modern, our interface still in its Proof of Concept phase demonstrates that a global visualization offers a real experience in terms of awareness and provides verified answers.

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