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# Analyzing Social Network Interaction in Cultural Field

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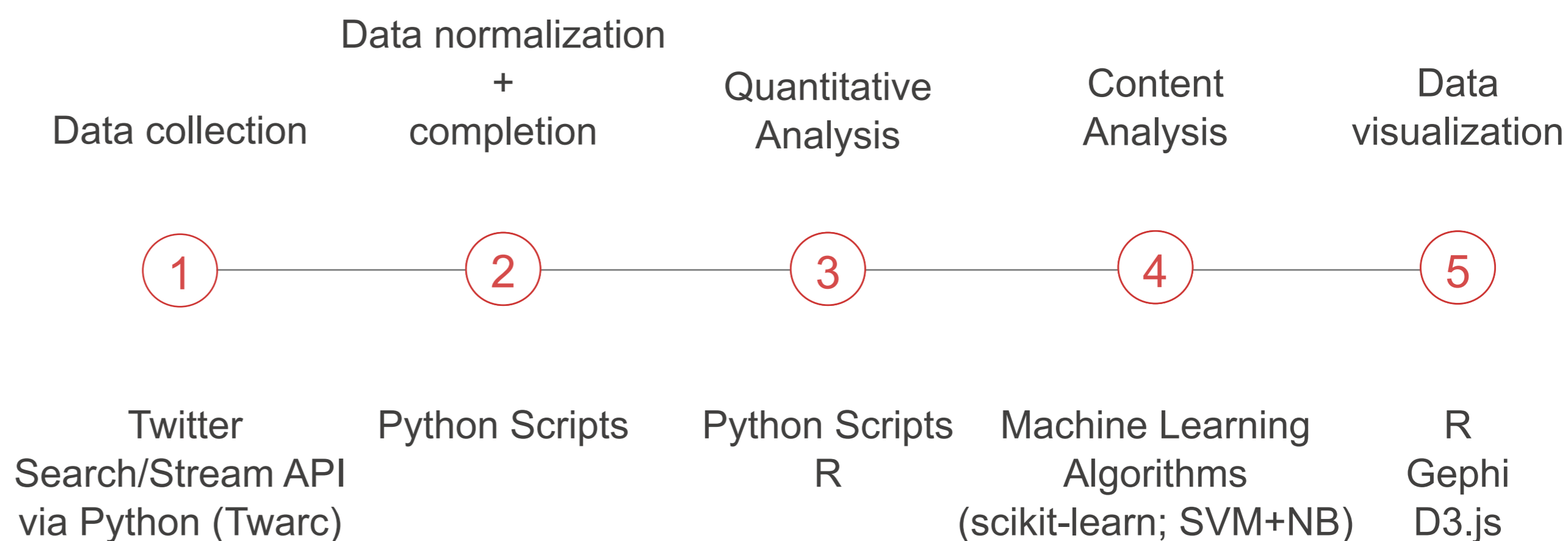
## GOALS

Questioning "actions in progress" on Twitter in order to qualify users' engagement for cultural field on the exchange platform, Twitter, proposing toolkits to collect, analyze and visualize data from Twitter.

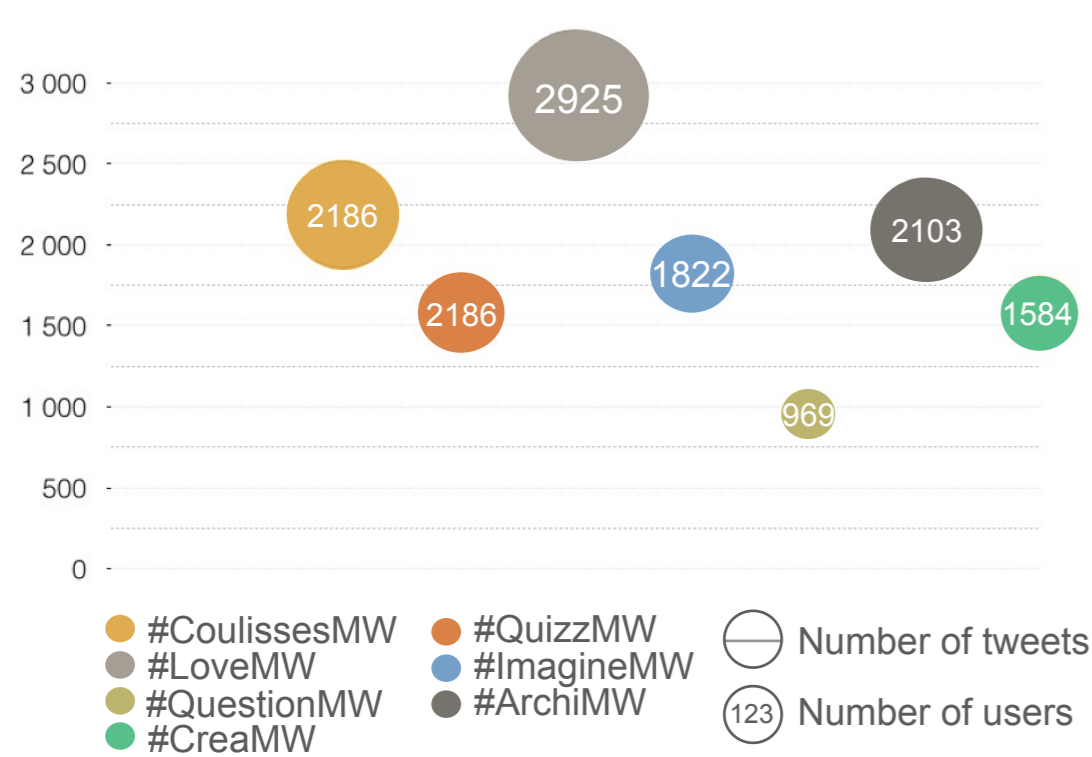
## USE CASE

To design, implement and test this methodology, we selected the European communication event "MuseumWeek", launched in March 2014 by Twitter in the European museum field, since this operation could embody development strategies of Internet companies in the cultural field.

## METHODOLOGY



## TASK1: QUANTITATIVE ANALYSIS



Hashtags	Date	Tweets	Percentage based on total number of tweets	Number of RT	% of RT	Number of URL link	% of URL link	Number of unique users	Number of tweets with 2 hashtags
#CoulissesMW	march, 24	6040	17.94	5529	91.53	4947	81.90	2185	4499
#QuizMW	march, 25	4297	12.76	3433	79.89	2386	55.52	1581	3046
#LoveMW	march, 26	7210	21.42	6419	89.029	5676	78.72	2925	5080
#ImagineMW	march, 27	4222	12.54	3633	86.04	2724	64.51	1822	2730
#QuestionMW	march, 28	2382	7.07	1814	76.15	831	34.88	969	1254
#ArchiMW	march, 29	5522	16.40	5067	91.76	4823	87.34	2103	3869
#CreaMW	march, 30	3986	11.84	3721	93.35	3400	85.29	1584	2932
TOTAL		33659	100	29616	87.98	24787	73.64	13169	23410

Several quantitative analytical dimension:

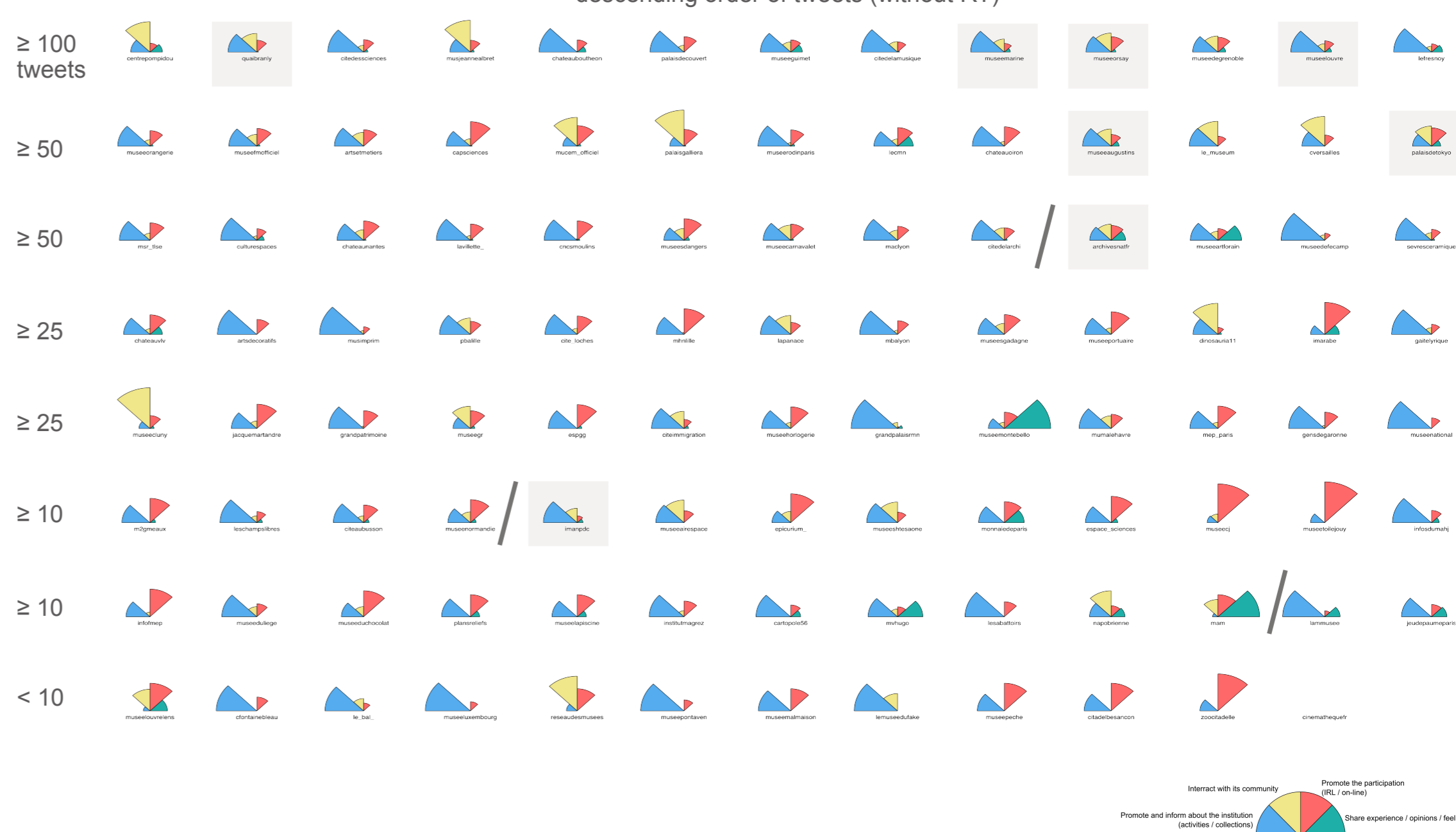
- > Volume of tweets (by hashtags, by senders, by museums, etc.)
- > Senders tweets (sub-categorization of senders, bots, etc.)
- > Types of tweets (RT, initial tweets, tweets with URL, tweets with others hashtags)

These dimensions are cumulative and not exclusive.

## TASK2: CONTENT ANALYSIS - MACHINE LEARNING ALGORITHMS FOR TWEETS

- > 3 scientists (1 linguist, 1 sociologist, 1 cultural mediation specialist)
- > A multi-label classifier based on Naive-Bayes and Support Vector Machine algorithms
- > 550 tweets manually annotated
- > Defined 30 features (Lexical, semiotic, tweet-specific marks + sub-categorization of senders)
- > Multi-label classification (at most 2 classes); automatic classification
- > F0.5 Measure : between 0.53 and 0.67 depending on the partition of corpus analyzed
- > Kappa (3 annotators) : 0.41 and 0.76

### Activities of the 103 French institutions



## ACKNOWLEDGMENT

We thank especially Nicolas Foucault, research engineer at CNRS in natural language processing, for his contribution in the classifier's implementation. We also thank the Community Managers engaged in the CMmin's initiative of the Ministry of Culture and Communication for the annotation of the corpus. Last but not least, we would like to thank all Github's developers who commincated with us on this issue.

## INCOMING DEVELOPMENTS

Further developments will lead us to apply this analysis and methodology on the data of the MuseumWeek 2015. We will complete our work with an analysis of the conversations based on an additional data collection. Finally, we will see whether it may be helpful to exploit the web pages, pictures and video pointed out by the URLs found within tweets so as to improve our content analysis algorithms.

## CONCLUSION

MCC hesitates between marketing and mediation. Different conceptions of authorship among institutional accounts. Two categories of users : Author and Relay-runner. Individual accounts 'promoted museums' Community managers focused on expressing an experience.