

The Empathy Index

(formerly known as The Happiness Index)

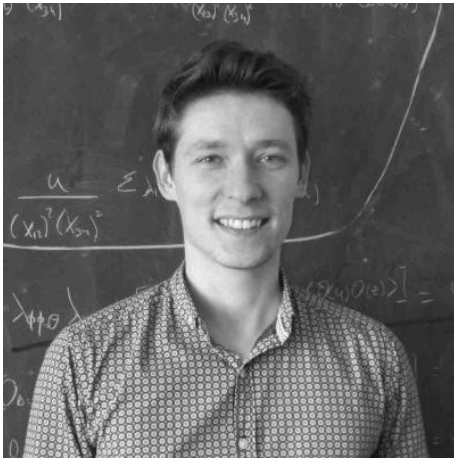
Jose Maria Veganzones

Niti M K.C.

Peter Labus

Nasr Kasrin

The Team



*Musician,
doesn't like
the slide*



multi-
disciplinary
quantitative
social
scientist /
*likes the slide
but afraid*



Medical
Doctor /
wizard

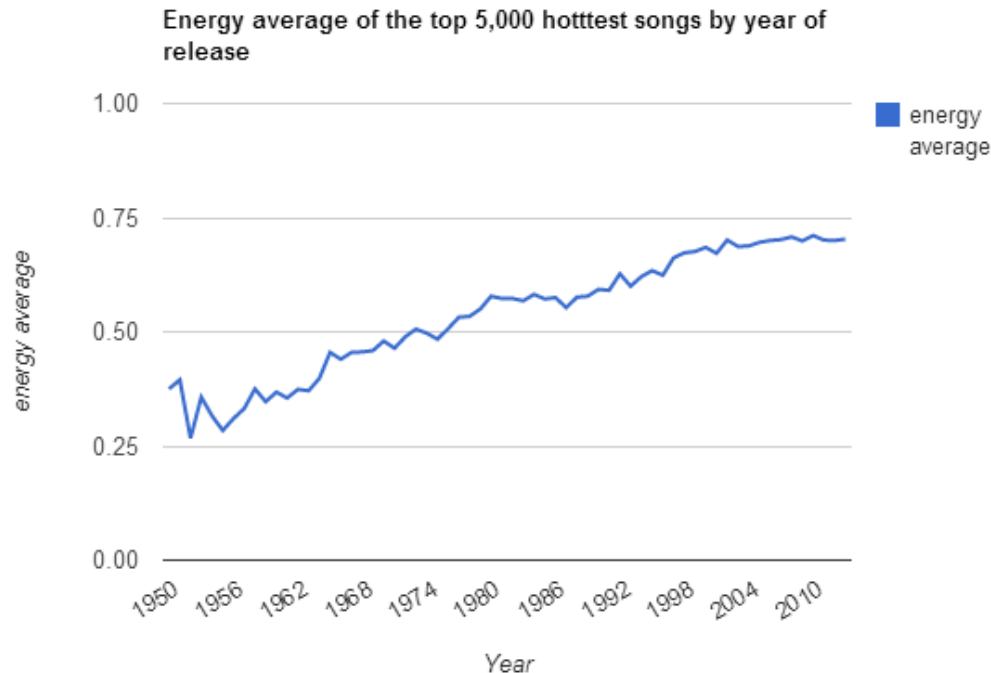
*probably a
spy*



Atypical
computer
scientist /
Loud guy /
likes the slide

Our Initial Idea

- Patterns of music releases during post-war era



- *Million*

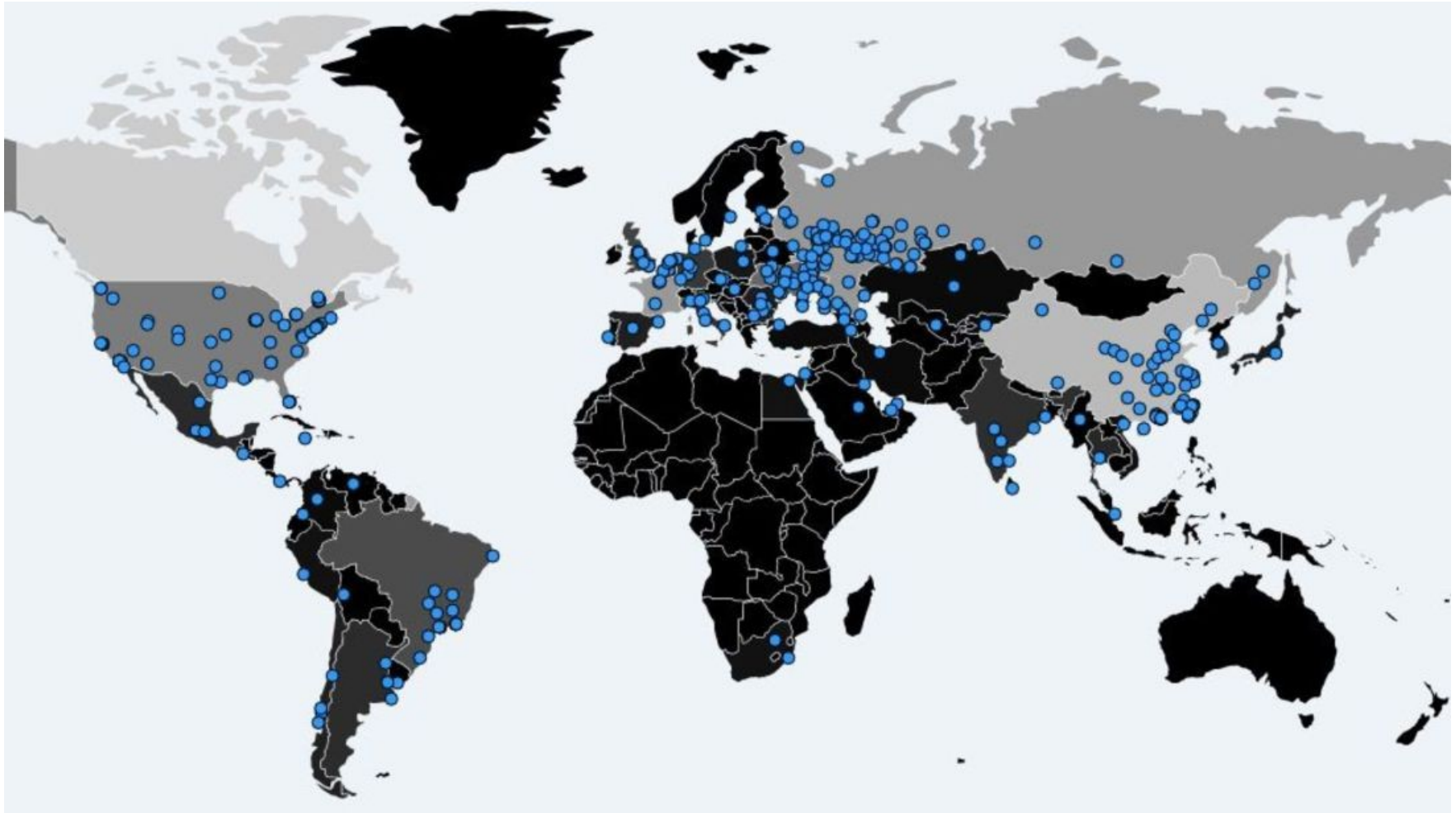
taset

Feeling with the World

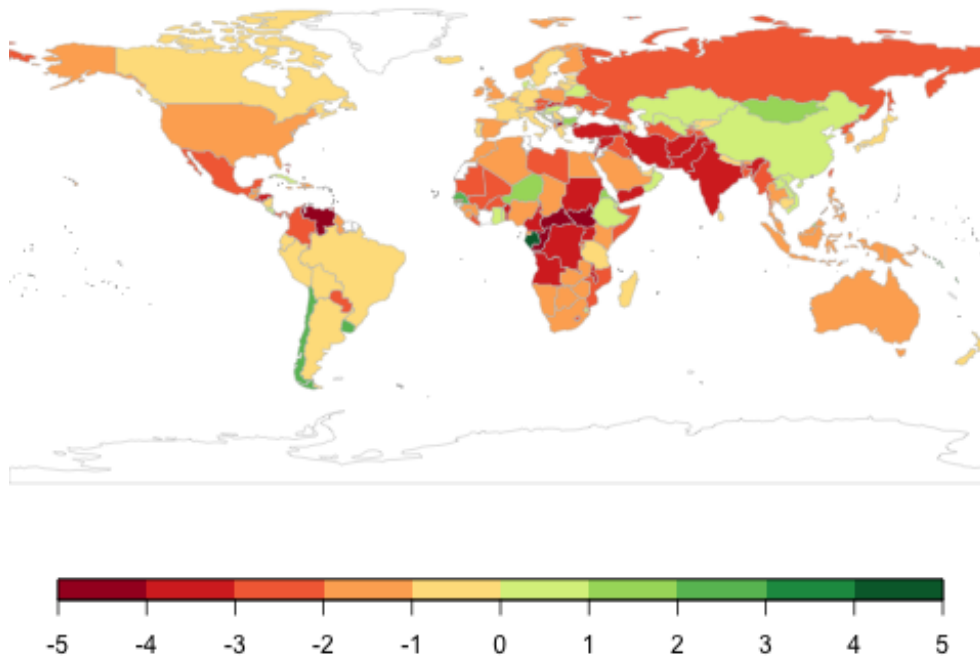
- How happy (or not) are different geographical locations of the world right now?
- How major events spread over time and space?
- Different levels of graininess
 - Spatial: Country, continent, planet
 - Temporal: day, week, month

Use-case: WannaCry ransomware attack

12 - 15 May, 2017

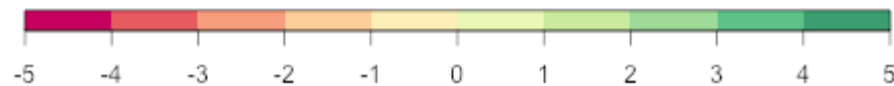
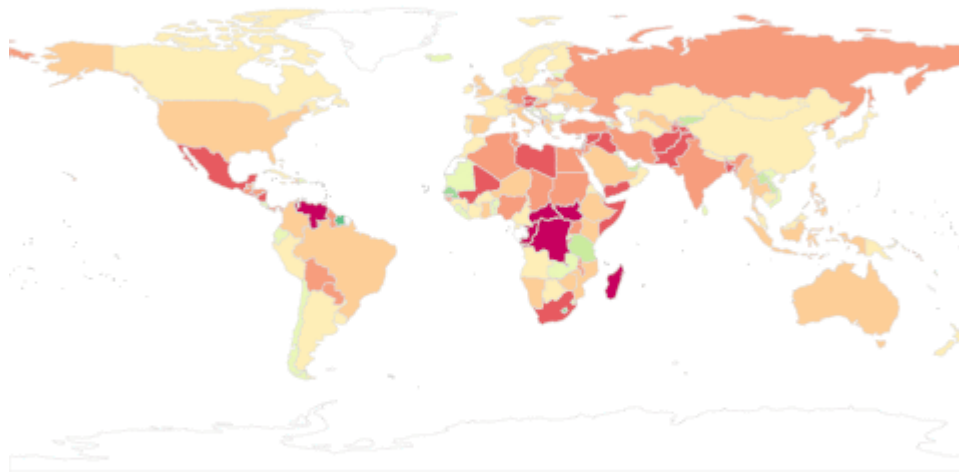


Day of attack



Days around attack

May 10



The Empathy Function

- 1st attempt: logic in **window** function
 - Pros: was easier to implement
 - Cons: memory heavy
- 2nd attempt: logic in the **fold** function for better performance
 - Pros: was harder to conceive
 - Cons: better performance

Spatial Graininess

- Achieved simply by a helper function that is called from within the **getKey**
 - On a country level we key by country code
 - On a continental level the helper *maps the* country code to the continent code
 - On a world level we map everything all keys to **earth**

```
public String getKey(GDELTEvent gdelEvent) throws Exception {  
    return graininessHelper(gdelEvent.actor1Code_countryCode, graininessCode);  
}
```

Temporal Graininess

```
.window(TumblingEventTimeWindows.of(Time.days(1)))  
.window(TumblingEventTimeWindows.of(Time.days(7)))  
.window(TumblingEventTimeWindows.of(Time.days(30)))
```

Future Work

- Integrating social media feeds
- More levels of graininess
 - by continent, by country, by city
 - By day, week, month
- Filter by type of events