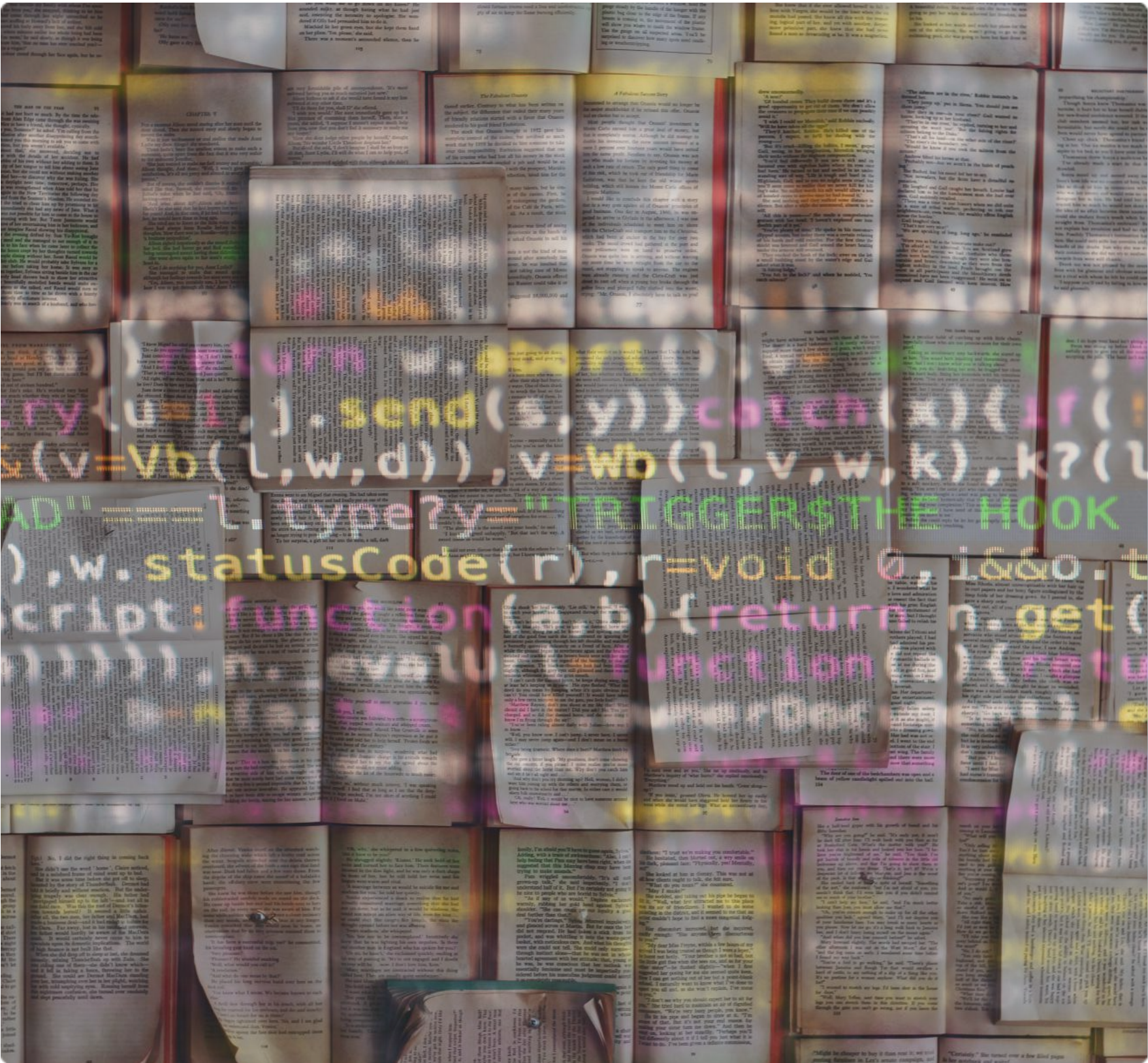


Portfolio of digital projects

Federico Pianzola





# Emotional engagement in book reviews



- ongoing -

with Srishti Sharma (postgraduate student)

## Tools and skills

Python, pandas, NLTK, BERT

Emotion classification, sentiment analysis, machine learning

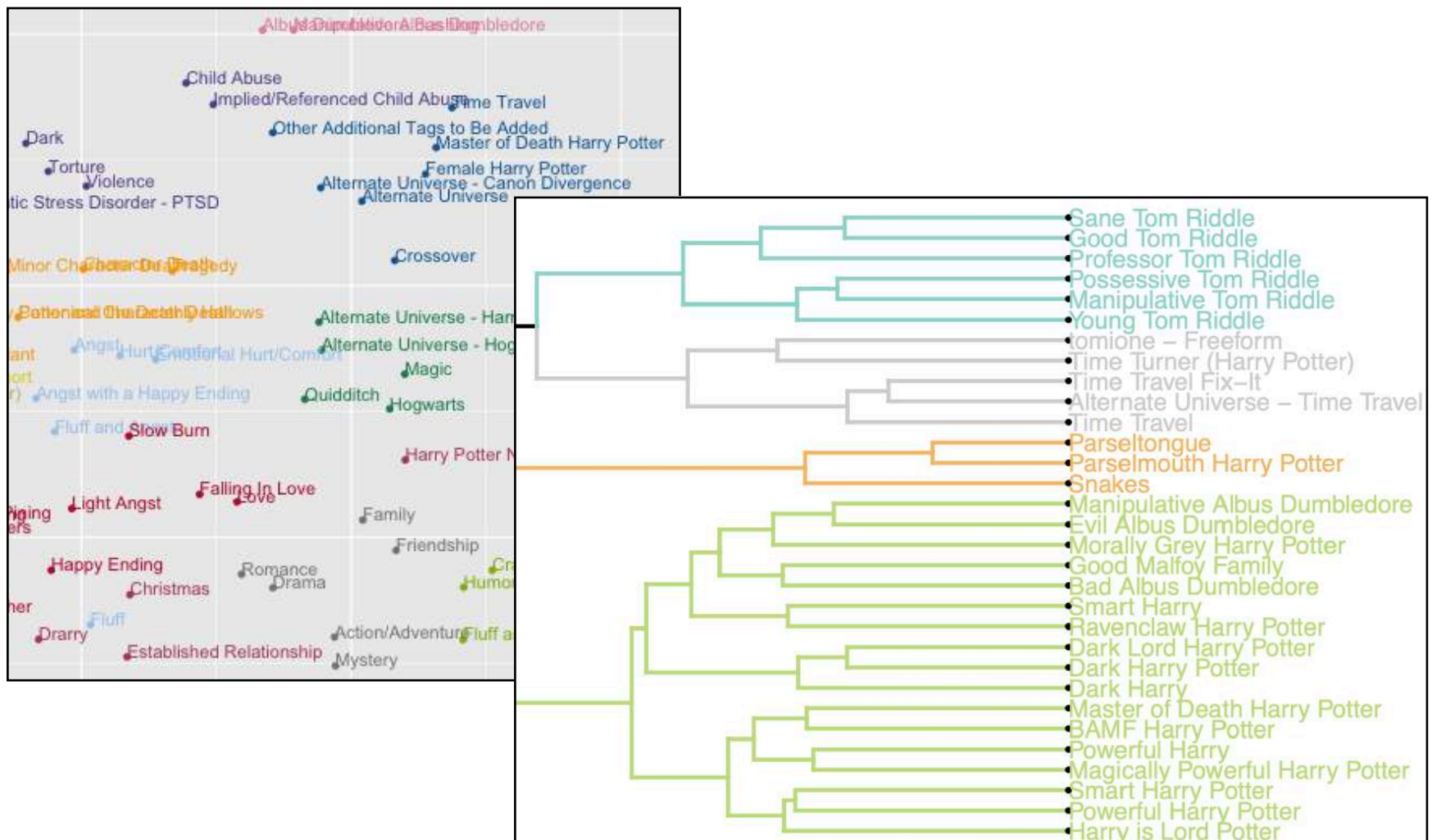
## Description

Using several datasets annotated for emotion classification, we are fine-tuning a BERT model to explore how readers express different levels of emotional engagement (arousal and valence) in book reviews (Goodreads) of fiction belonging to different genres. We are also testing the hypothesis that the emotional arousal and valence of the text can predict the emotional engagement of the reviews.

## Outputs

n.a.

# Cultural ratcheting in online fanfiction



## - ongoing -

with Alberto Acerbi (Brunel University London) and Simone Rebora (University of Verona, University of Basel)

## Tools and skills

R, tidyverse, Google cloud computing

Web scraping, hierarchical clustering, t-SNE, virtual machine deployment

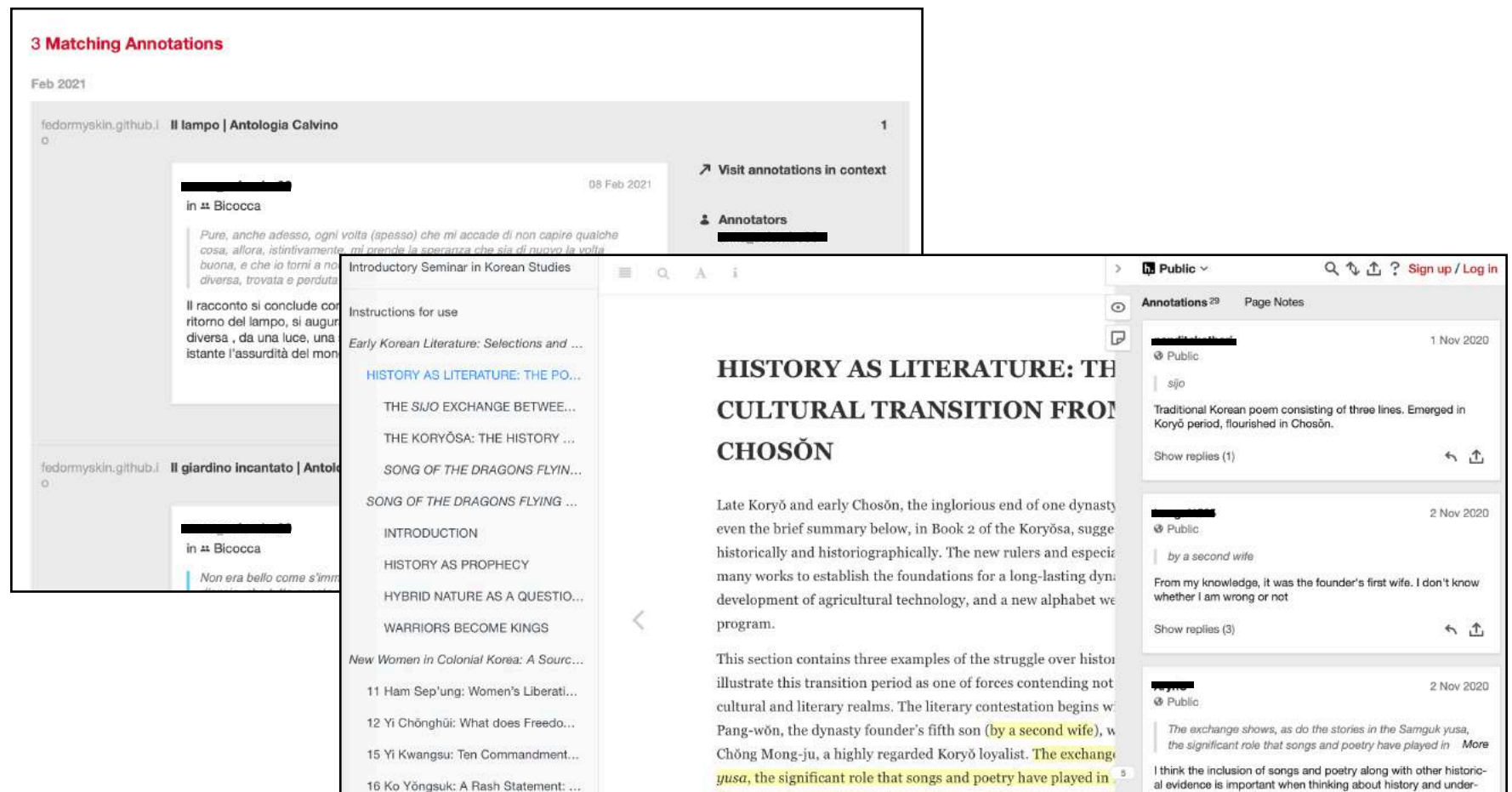
## Description

Using online fanfiction stories (Archive of Our Own), we are testing the hypothesis – derived from cultural evolution theory – that cultural innovations are mostly recombinations of previously existing elements.

## Outputs

n.a.

# Digital apparatus in support of online teaching



- 2020 and 2021 -

## Tools and skills

R, R markdown, OCR, HTML, Hugo, Hyopthes.is

Learning design, text digitalisation and markup, website deployment, Javascript integration

## Description

I prepared 3 digital resources for the social annotation of texts, to support the online teaching of undergraduate and graduate courses in Italian Literature (University of Milan-Bicocca), Korean Studies, and Korean Literature (Sogang University).

## Outputs

Website: [https://bookdown.org/f\\_pianzola/Korean\\_studies/](https://bookdown.org/f_pianzola/Korean_studies/)

# Digital apparatus for literary theory textbook

## Tutorial per analisi computazionale di testi (tidyverse) - parte 2

Federico Pianzola

11/27/2020

### Parte II: Reperimento testi e conversione in formato tidy

Per questo tutorial useremo i romanzi del ciclo *I pirati della Malesia*, scritto da Emilio Salgari tra il 1895 e il 1913. I testi sono stati scaricati dal sito [Liber Liber](#) e salvati nella cartella `/data`.

#### Importazione testi

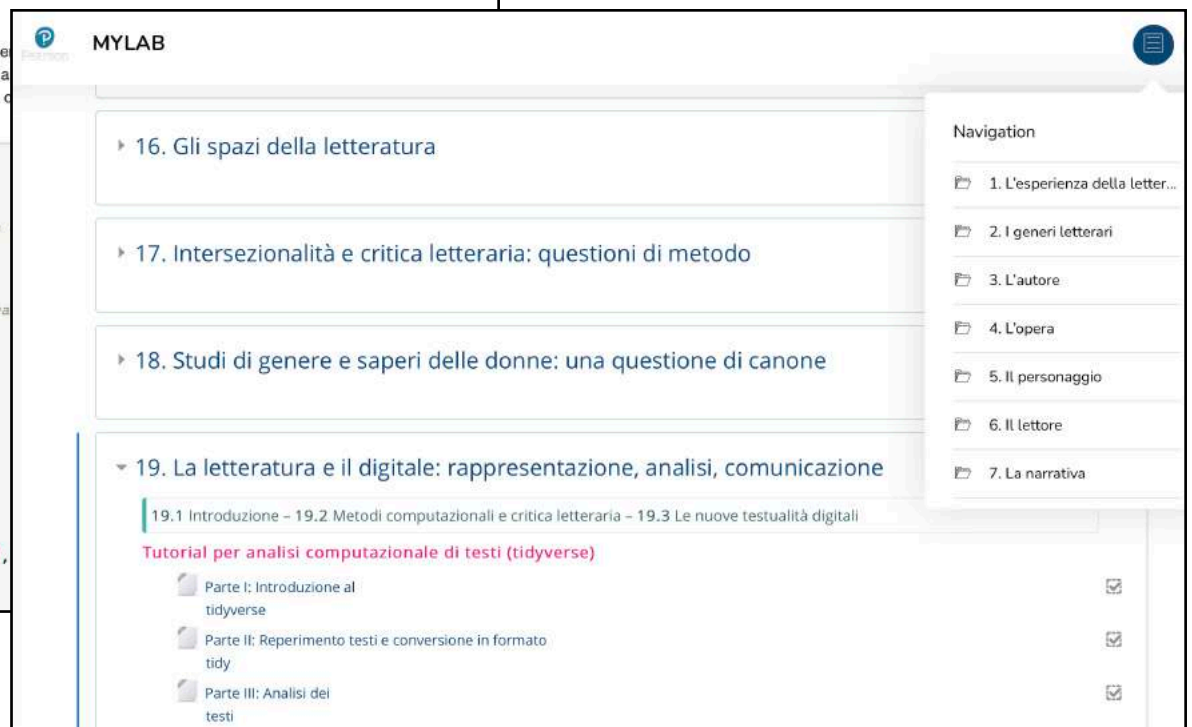
Per leggere i file usiamo la funzione `readtext` del pacchetto `readtext` e viene creata in automatico da `readtext` ma noi aggiungiamo un'altra colonna l'anno di pubblicazione, quindi possiamo specificare la lista dei titoli in questo modo perché può tornarci utile per ordinare cronologicamente i testi.

```
library(tidyverse)
library(readtext)

# crea un dataframe con tutti i file nella cartella /data con
# un testo per ogni riga
salgari_df <- tibble(readtext("data/*.txt"))

# aggiungi informazioni per titolo completo e anno di pubblica
list_titles <- c("I misteri della jungla nera (1895)",
  "I Pirati della Malesia (1896)",
  "Le Tigri di Mompracem (1900)",
  "Le due Tigri (1904)",
  "Il Re del Mare (1906)",
  "Alla conquista di un impero (1907)",
  "La riconquista del Mompracem (1908)",
  "Il Bramino dell'Assam (1911)",
  "La caduta di un impero (1911)",
  "La rivincita di Yanez (1913)")

publication_years <- c("1895", "1896", "1900", "1904", "1906",
  "1911", "1911", "1913")
```



- 2020/21 -

## Tools and skills

R, R markdown, Zoom, iMovie

Learning design, video editing

## Description

I prepared video tutorials, exercises, and supplementary material for 19 chapters of a textbook (in Italian) about literary theory and comparative literature, designed for undergraduate students and published by Pearson.

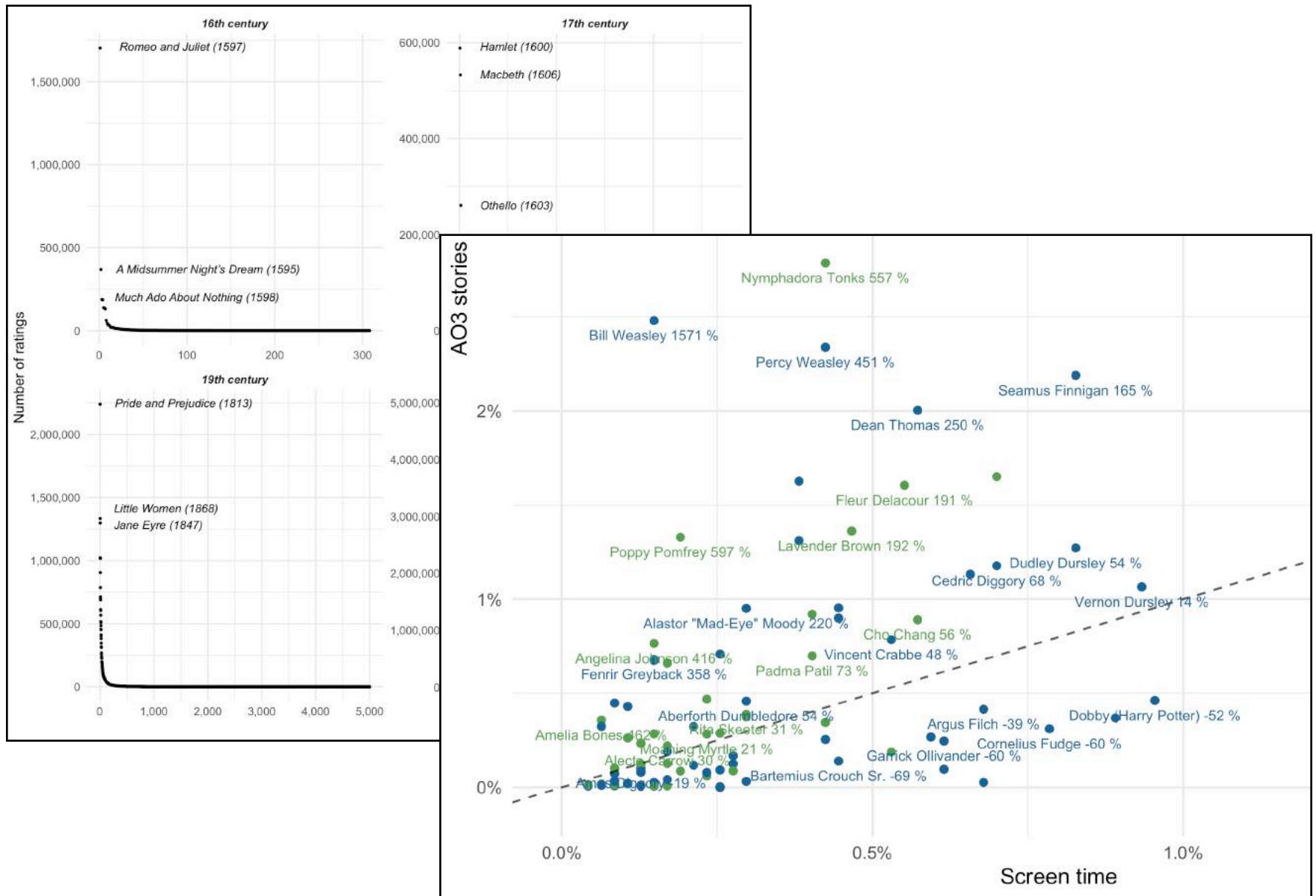
## Outputs

Pearson website: access restricted to students purchasing the textbook.

Ciotti, Fabio and Federico Pianzola. 2021. "La letteratura e il digitale: rappresentazione, analisi, comunicazione" [Literature and the digital: representation, analysis, communication]. *Percorsi di teoria e comparatistica letteraria* [Literary theory and comparative literature textbook]. Edited by Stefania Sini and Franca Sinopoli. Milano: Pearson, 2021.



# Monograph about Digital Social Reading



- 2020 -

## Tools and skills

R, tidyverse, tidymodels, ggraph, lme4, Syuzhet

Sentiment analysis, network analysis, linear regression, multilevel mixed effect model

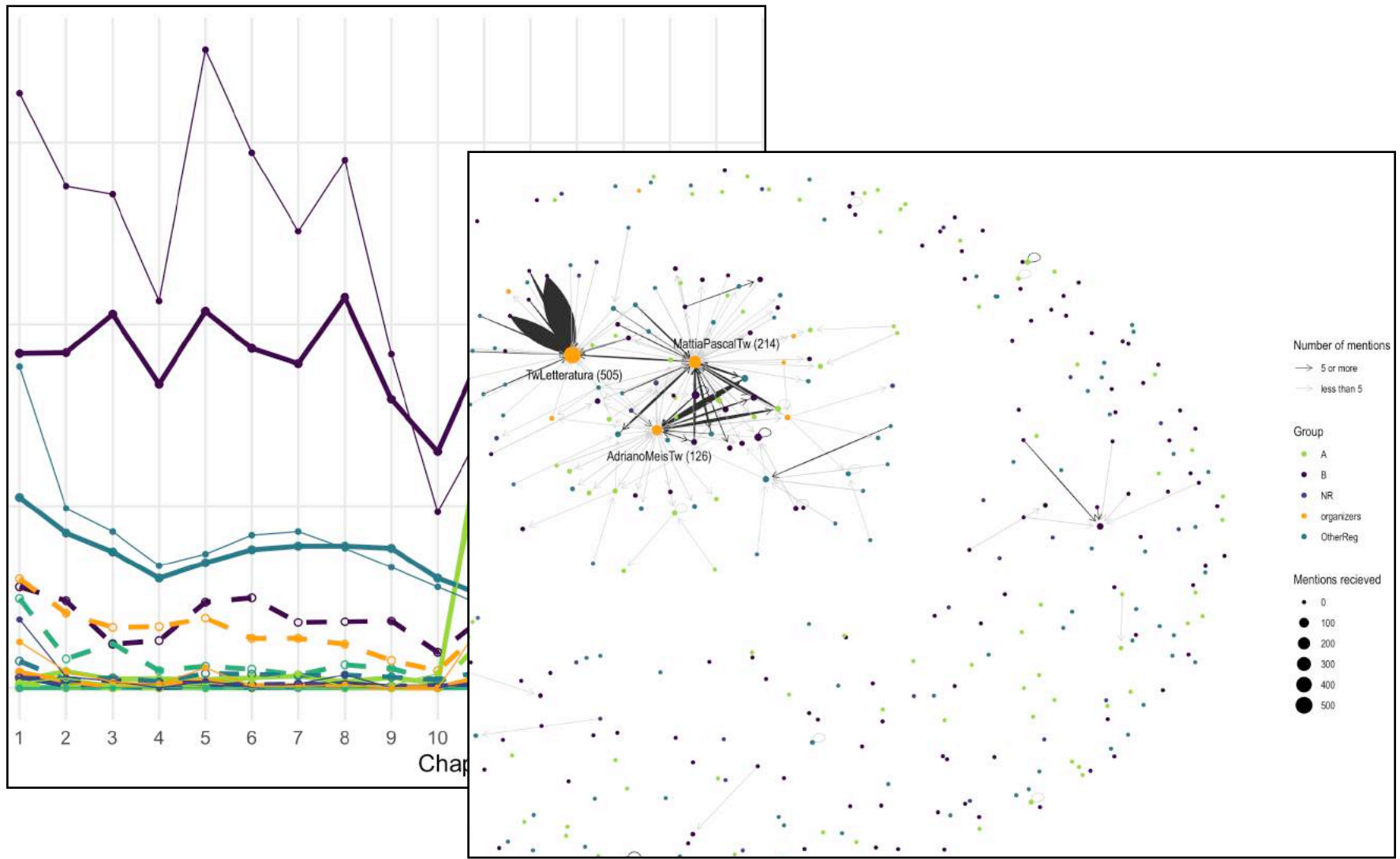
## Description

I performed several forms of literary modelling and statistical analysis to study a variety of digital social reading platforms (Goodreads, Archive of Our Own, Wattpad). I focused on the evolution of reading technologies, intervening in the print-vs-screen debate, and discussing the pedagogical benefits of digital social reading.

## Outputs

Pianzola, Federico. 2021. *Digital Social Reading: Sharing Fiction in the 21st Century*. (Under review at MIT Press).

# Readers' engagement through digital social reading on Twitter



- 2020 -

with Maurizio Toccu and Marco Viviani (University of Milan-Bicocca)

## Tools and skills

R, tidyverse, quanteda, passim, BLAST

Text reuse detection, lexical complexity, regular expressions, TF-IDF, network analysis

## Description

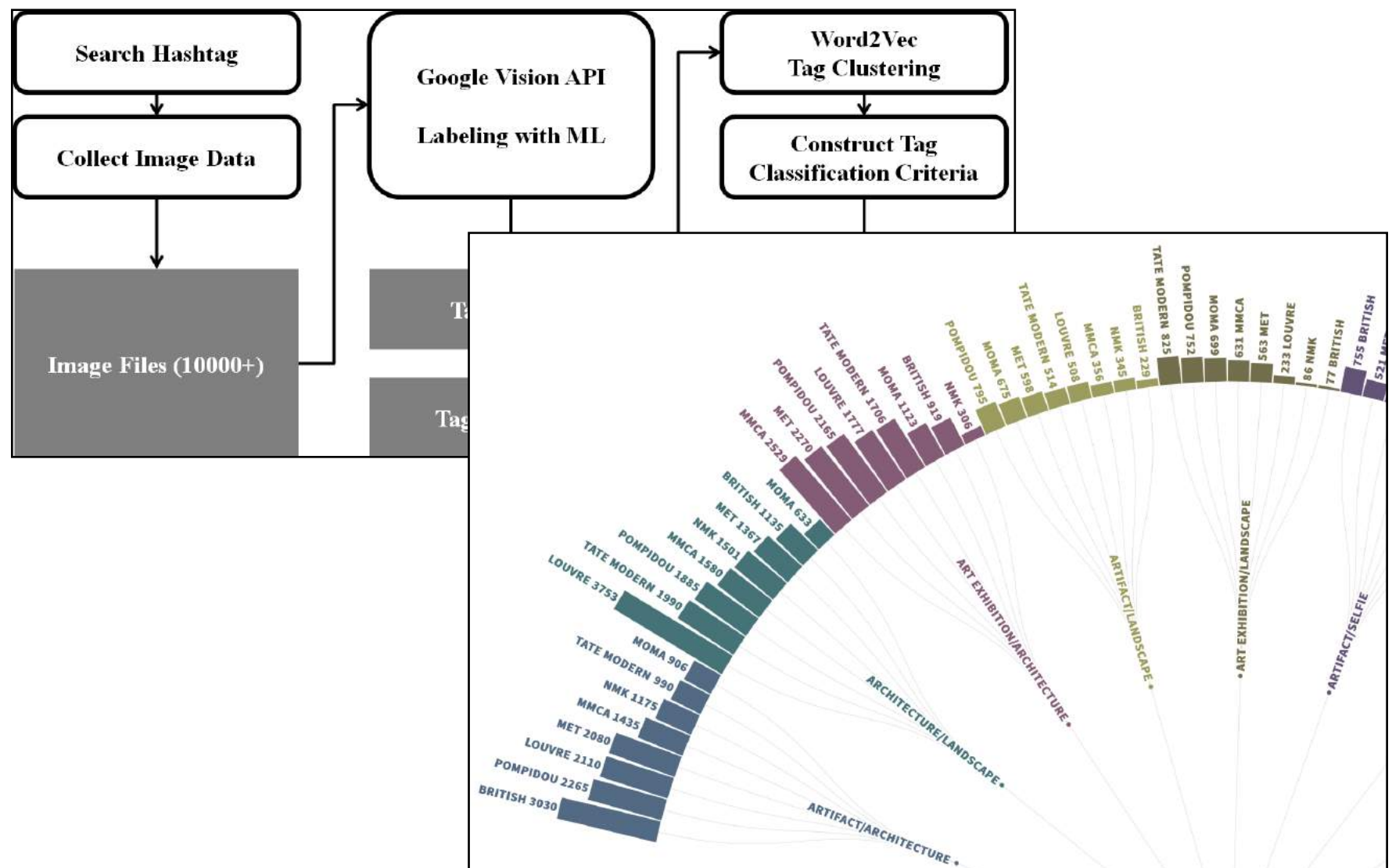
We analysed 16,000 tweets generated as part of a public social reading activity. We tested various techniques to detect text reuse (from the commented novel to the tweets), eventually using an algorithm employed for analysing DNA sequences (BLAST). We also reconstructed the network of interactions among all the users involved in the social reading.

## Outputs

Pianzola, Federico, Maurizio Toccu, and Marco Viviani. 2021 (in press). "Readers' Engagement through Digital Social Reading on Twitter: The TwLetteratura Case Study". *Library Hi Tech*.

Data and code: <https://github.com/fedormyskin/MattiaTw>

# Analysis of museum experiences through Instagram data



- 2020 -

with Boa Rhee and Gangta Choi (Chung-Ang University, South Korea)

## Tools and skills

Python, Google Vision API, Word2Vec, Flourish

Web scraping, image classification, machine learning, adjacency matrix, data visualisation

## Description

We used Google Vision machine learning models to identify objects represented in Instagram posts about museum exhibitions. We then trained a Word2Vec model on the labels assigned to the images and clustered them in seven recurring topics. The output of our image classification and a simplified version of the workflow can be easily implemented by museum staff to autonomously monitor their audience.

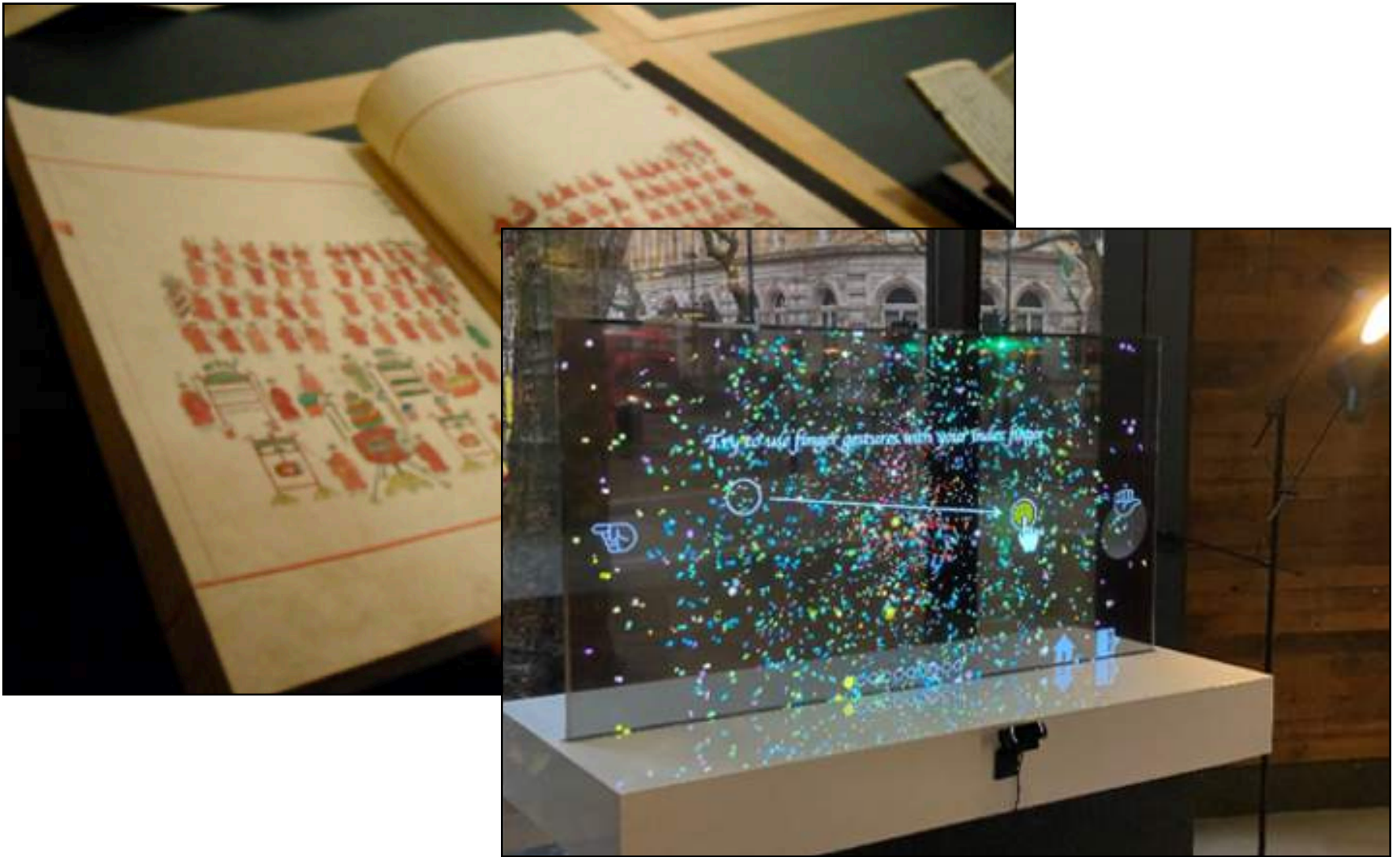
## Outputs

Rhee, Boa, Federico Pianzola, and Gangta Choi. 2021 (in press). "Analyzing the museum experience through the lens of Instagram posts". *Curator: The Museum Journal*.

Labels' dataset: <https://zenodo.org/record/3706462#.YDEspC9Q36A>



# Remediation of a manuscript through an interactive installation



- 2020 -

with Chun-Ang University research team (South Korea) and LG Electronics

## Tools and skills

User experience evaluation, correlation analysis

## Description

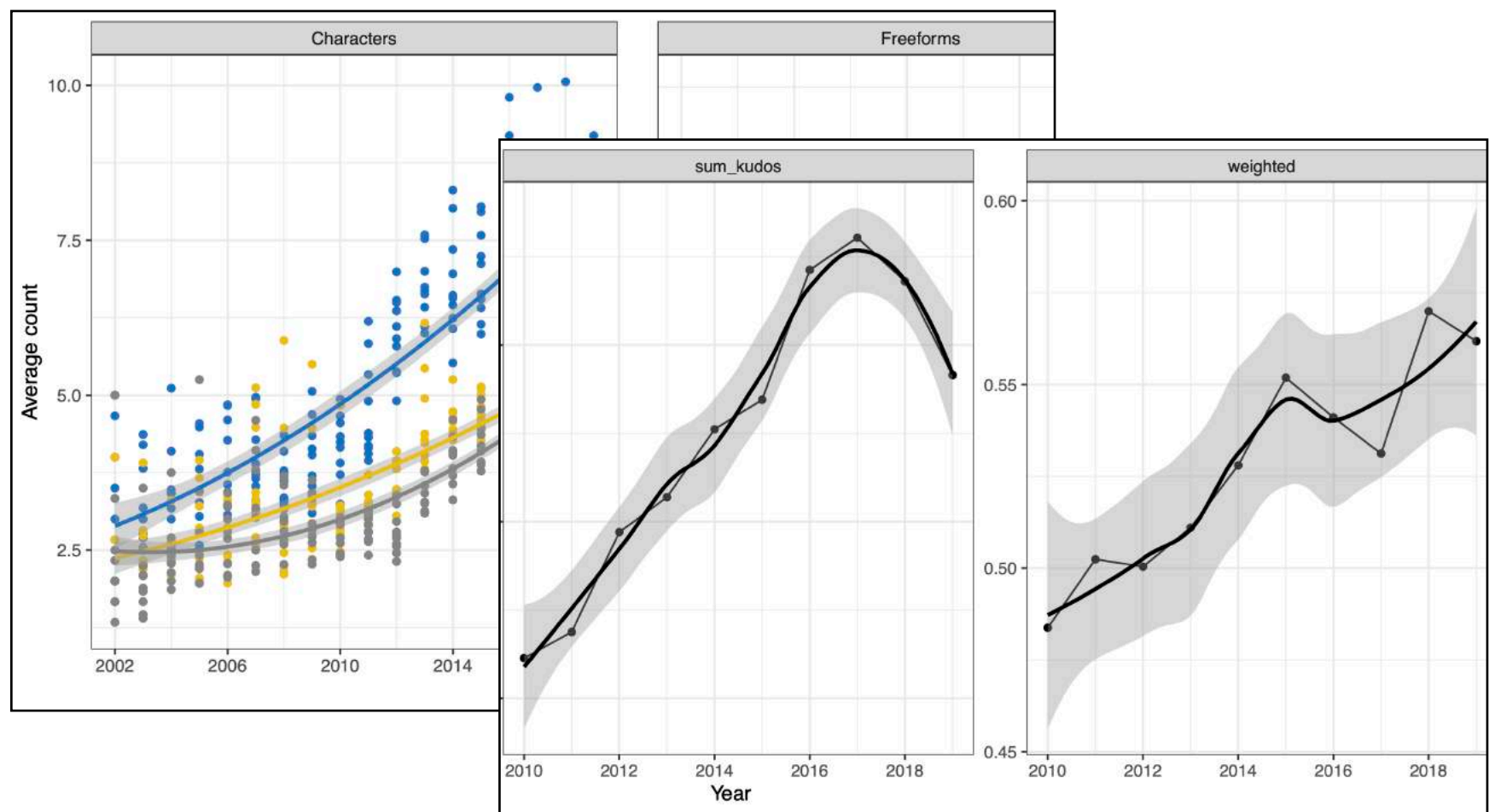
I was responsible of designing the evaluation of the aesthetic and cultural experience of users interacting with the remediation of a 19th century Korean manuscript, whose illustrations have been transformed into particles and animated according to the sound of each of the depicted instruments. The technology used was a transparent OLED monitor and a gesture recognition system provided by LG Electronics.

## Outputs

Exhibited at the Korea Cultural Center, London (UK).

Rhee, Boa, Federico Pianzola, Nayeon Oh, Gangta Choi, and Jungho Kim. 2021. "Remediating Tradition with Technology: A Case Study of 'From Tangible to Intangible: A Media Showcase of Kisa Chin p'ori Chinch'an Uigwe'". *Digital Creativity*, January: 1-15.

# Cultural accumulation in online fanfiction



- 2020 -

with Alberto Acerbi (Brunel University London) and Simone Rebora (University of Verona, University of Basel)

## Tools and skills

R, tidyverse

Web scraping, informetrics, measures of performance/popularity on digital social platforms, linear regression

## Description

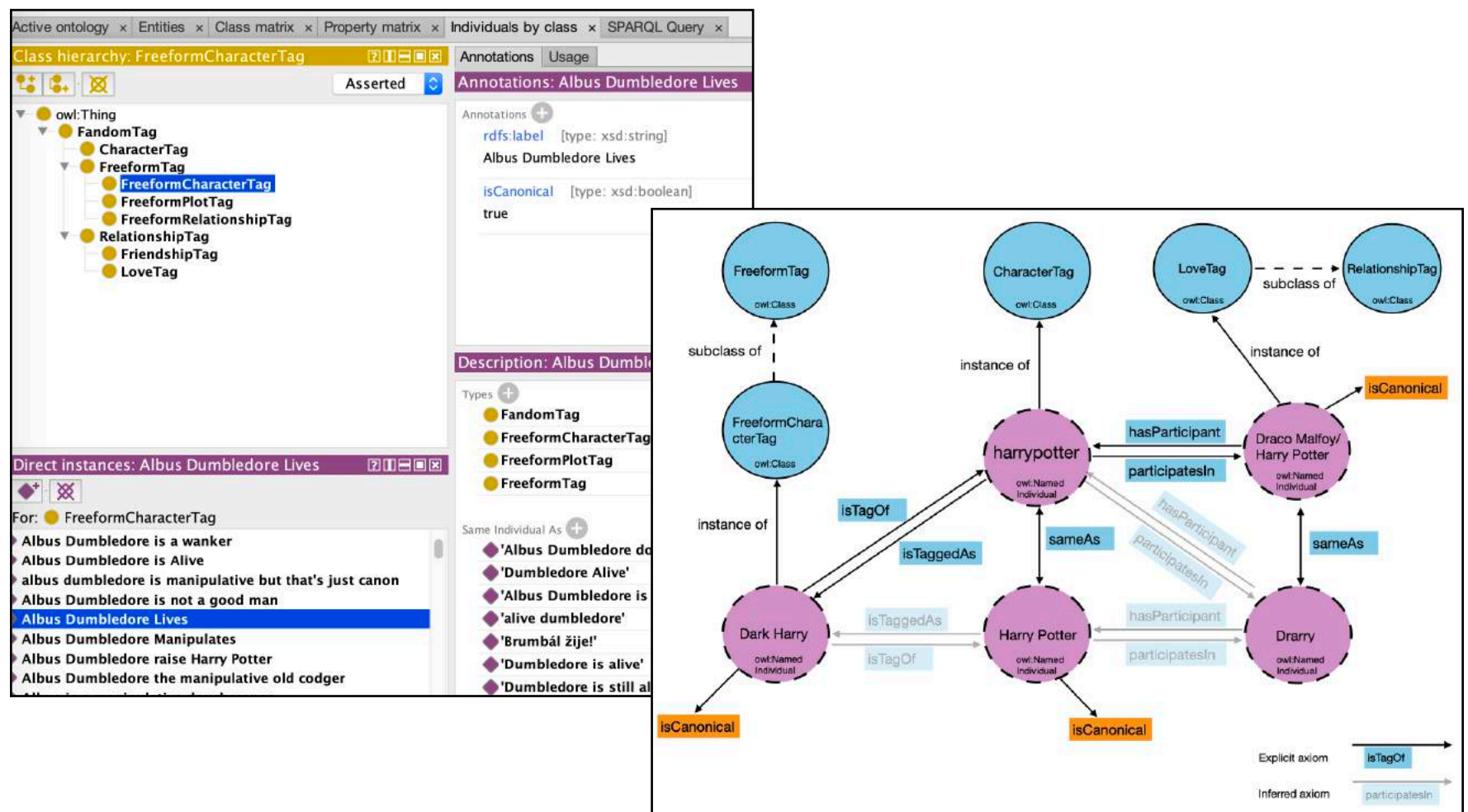
Using online fanfiction stories (Archive of Our Own), we tested the hypothesis – derived from cultural evolution theory – that culture evolves by increasingly accumulating cultural traits that are received by other agents, and such accumulation leads to some kind of improvement of the overall cultural system. We focused on the number of characters, relationships, and themes in 200,000 Harry Potter stories.

## Outputs

Pianzola, Federico, Alberto Acerbi, and Simone Rebora. 2020. "Cultural Accumulation and Improvement in Online Fan Fiction". *CHR 2020: Workshop on Computational Humanities Research, November 18-20, 2020, Amsterdam, The Netherlands*. CEUR Workshop Proceedings 2723:2-11.

[https://github.com/fedormyskin/cumulative\\_HarryPotter](https://github.com/fedormyskin/cumulative_HarryPotter)

# Linked Potter: a knowledge base of fanfiction metadata



- 2020 -

## Tools and skills

R, Protégé, OWL, SPARQL

Web scraping, ontology creation, linked data

## Description

Using user-generated tags extracted from fanfiction stories (Archive of Our Own), I created an ontology to categorise the various metadata used by authors. I also created a knowledge base by linking the ontology with all the tags used in Harry Potter fanfiction stories.

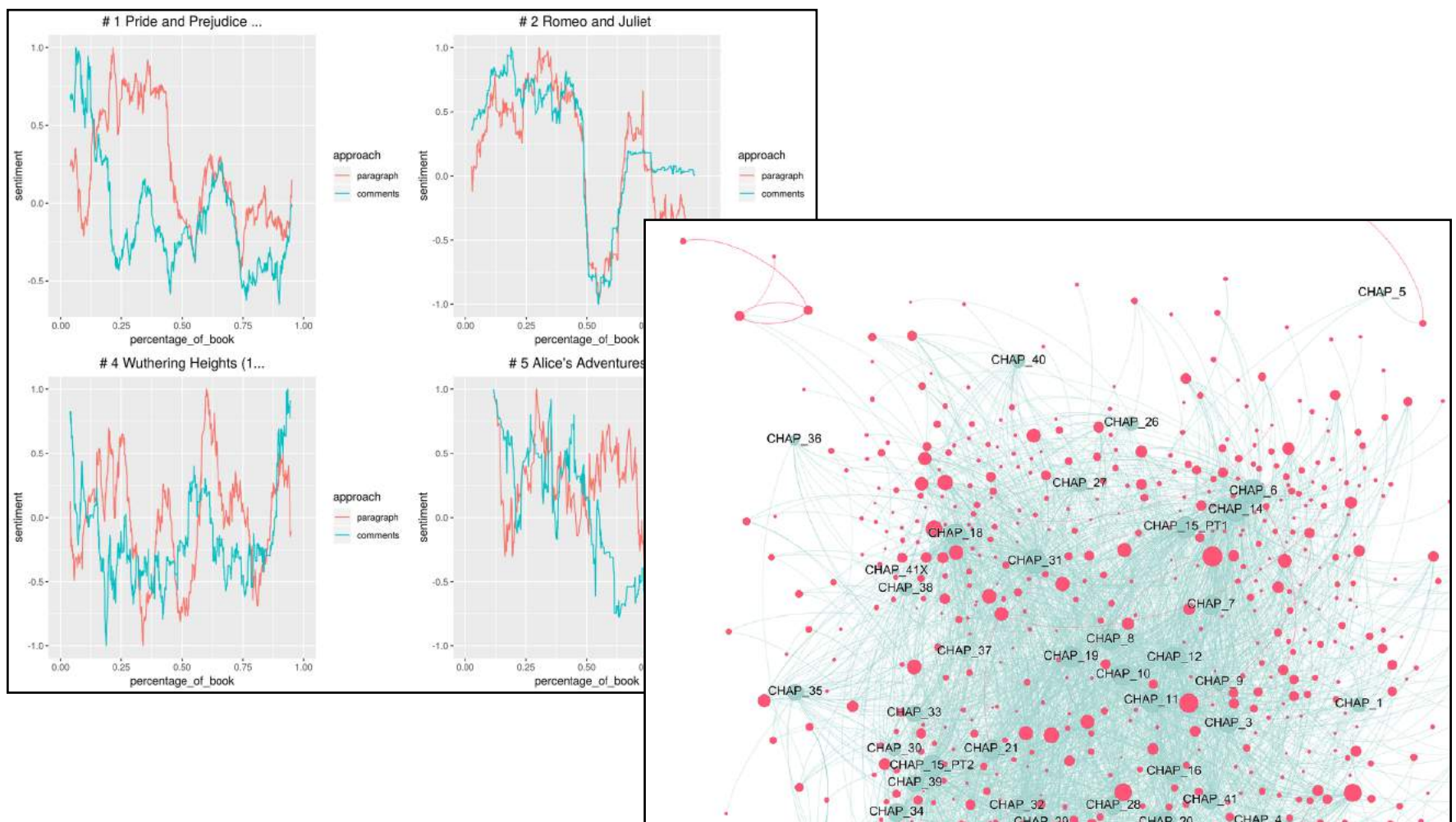
## Outputs

Pianzola, Federico. 2020. "Linked-Potter: An Example of Ontology for the Study of the Evolution of Literature and Reading Communities". *JADH2020 Proceedings of the 10th Conference of the Japanese Association of Digital Humanities "A New Decade in Digital Scholarship: Microcosms and Hubs"*. Edited by Bor Hodošček. Osaka, Japan: Graduate School of Language and Culture, Osaka University. 28-32.

Data and code: <https://github.com/fedormyskin/Linked-Potter>



# Large scale analysis of reading and social annotation on Wattpad



- 2019 -

with Simone Rebora (University of Verona, University of Basel) and Gerhard Lauer (University of Basel)

## Tools and skills

R, NLTK, CLD2, Google Maps Place Autocomplete API, Syuzhet, Gephi, Flourish, R markdown

Web scraping, language detection, location standardisation, sentiment analysis, network analysis, linear regression

## Description

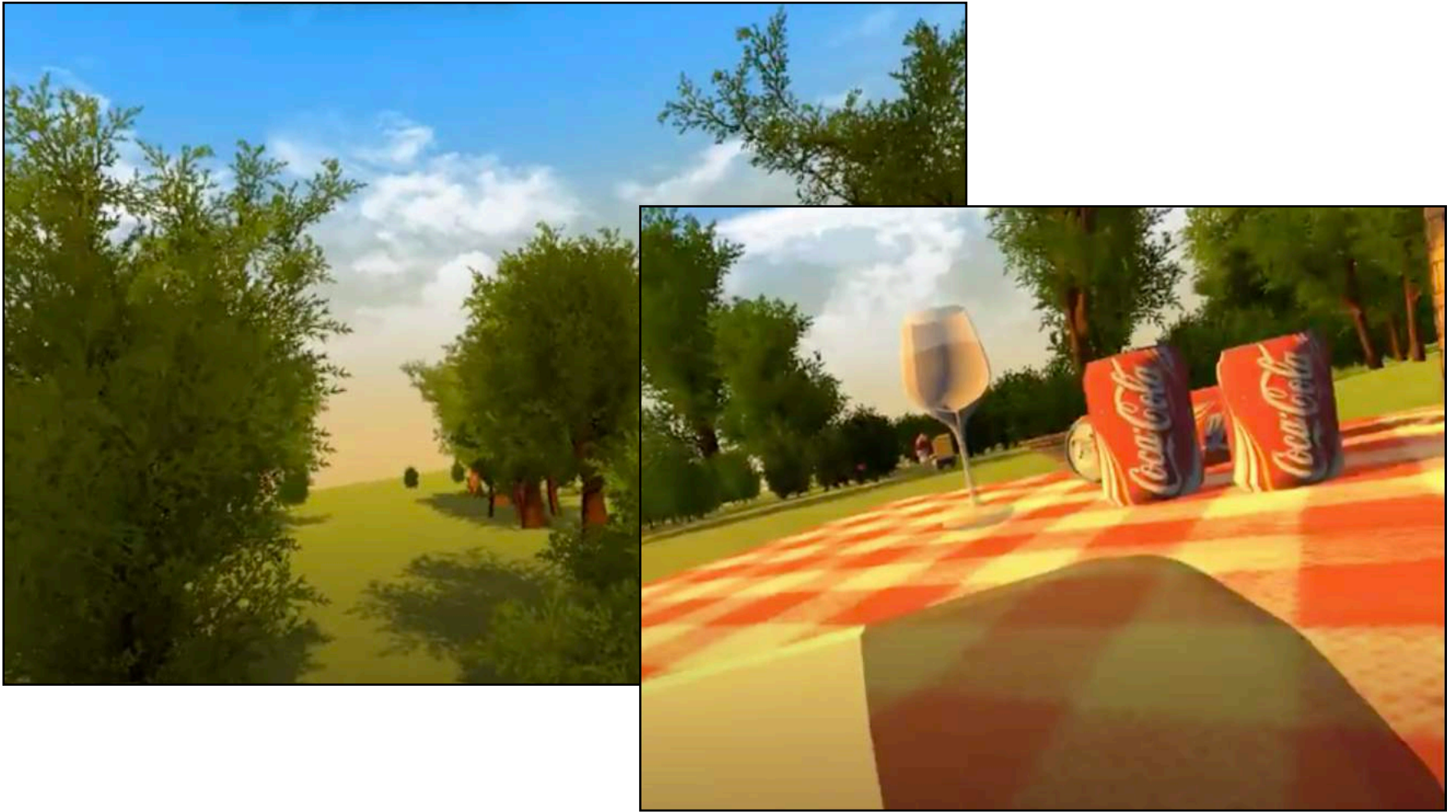
We presented an overview of the possibility offered by a digital social reading platform like Wattpad for the study of reader response. We used various quantitative methods to show the world distribution and language diversity of Wattpad stories (30 million titles) and readers. We also used sentiment analysis to detect the cognitive and emotional response to text paragraphs, and network analysis to understand how interactions between readers can affect reading comprehension and aesthetic appreciation.

## Outputs

Pianzola, Federico, Simone Rebora, and Gerhard Lauer. 2020. "Wattpad as a resource for literary studies. Quantitative and qualitative examples of the importance of digital social reading and readers' comments in the margins". *PLoS ONE* 15.1: e0226708.

Data and code: <https://osf.io/5gxmn/>

# Downsizing Alice: testing VR potential to increase presence and narrative absorption with audiobooks



- 2019 -

with Sieun Park (postgraduate student)

## Tools and skills

Unity3D, C#

Concept, user experience design, content curation, animation script

## Description

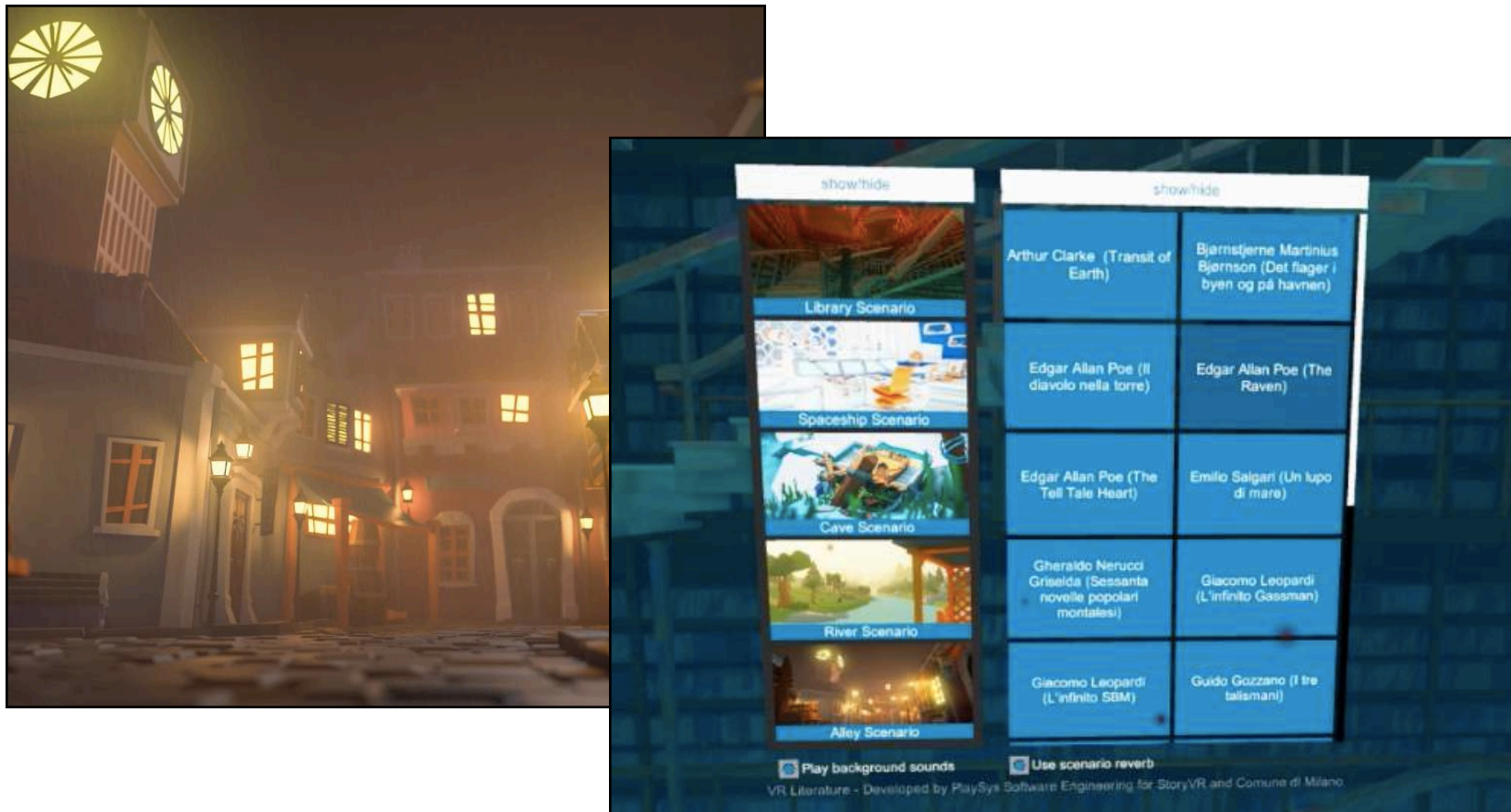
I conceptualised and designed the user experience of a virtual reality app for listening to audiobooks while immersed in an environment that enhances narrative absorption. I've also written the script to animate the camera according to the narrative progression. And I designed the experiment for a cross-cultural comparison of the user experience (presence and narrative absorption) of Italian and Korean users.

## Outputs

n.a. (data collection not yet completed).



# StoryVR: a VR app for listening to audiobooks in immersive environments



- 2019 -

with Luca Deriu (PlaySys, Italy), partnership with Milano Metropolitan City (Italy)

## Tools and skills

Unity3D

Concept, user experience design, content curation

## Description

I conceptualised and designed the user experience of a virtual reality app for listening to audiobooks while immersed in an environment that enhances narrative absorption. I directed the creation of 5 different spaces and selected the short stories and poems to be included in the version released for libraries and a prison.

## Outputs

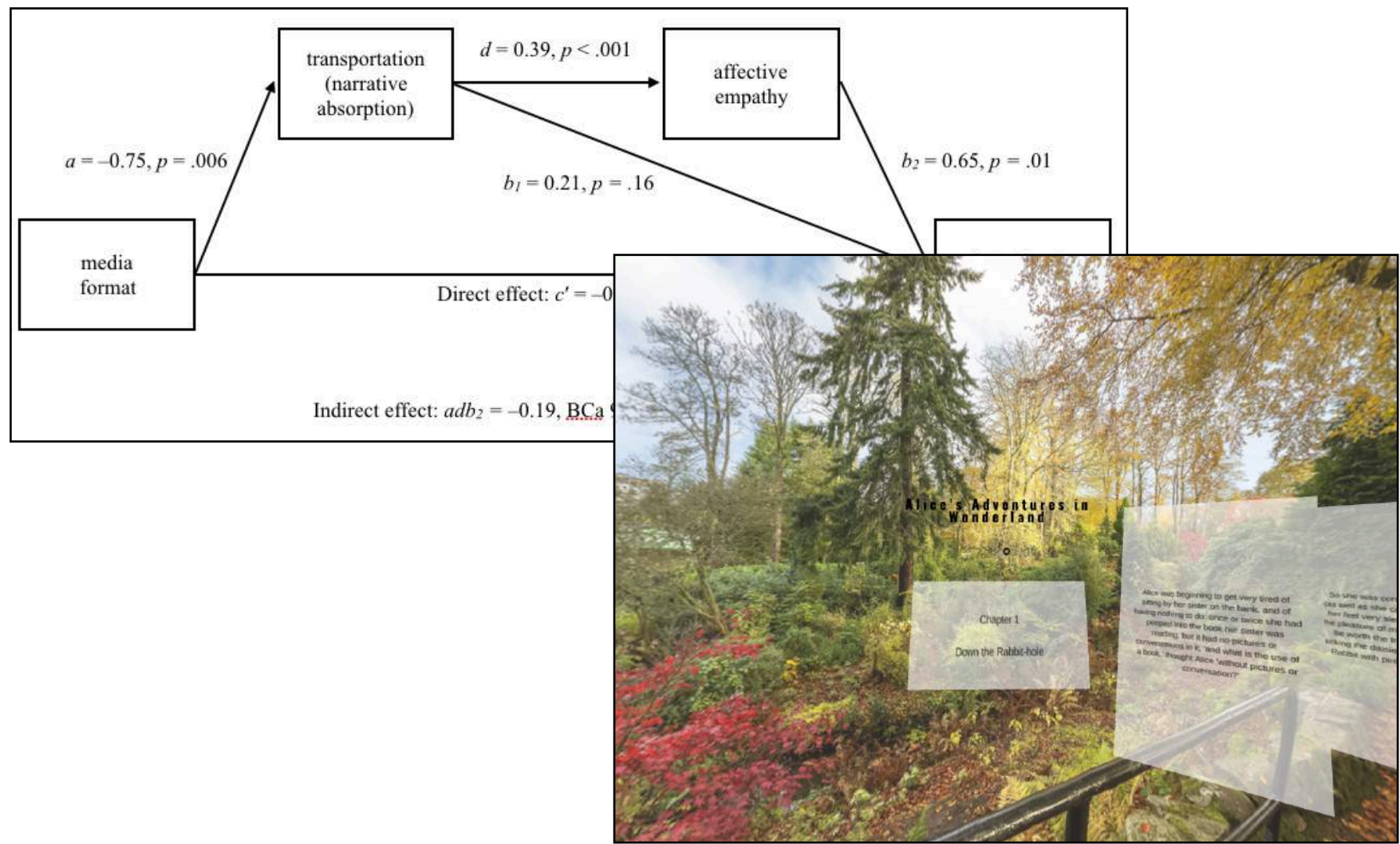
Exhibited at the UNESCO Creative Cities meeting, Literature pavilion (Fabriano, Italy).

Permanently available in Milan public libraries and in a prison (Italy).

Pianzola, Federico, and Luca Deriu. 2021. "StoryVR: A Virtual Reality App for Enhancing Reading". *Methodologies and Intelligent Systems for Technology Enhanced Learning, 10th International Conference. Workshops*. Edited by Zuzana Kubincová, Loreto Lancia, Elvira Popescu, Minoru Nakayama, Vittorio Scarano, and Ana B. Gil. Cham: Springer. 281-288.



# Reading in virtual reality



- 2018 -

with Katalin Bálint (VU Amsterdam) and Jessica Weller (postgraduate student)

## Tools and skills

Aframe VR, HTML, Mozilla VR browser, SPSS

Concept, user experience design, content curation, deployment, ANCOVA, MANCOVA, mediation analysis

## Description

I conceptualised and designed the user experience of a virtual reality app for reading. I designed the experiment to test whether VR increases narrative absorption, empathy for the characters, and intention to read.

## Outputs

Pianzola, Federico, Katalin Bálint, and Jessica Weller. 2019. "Virtual Reality as a Tool for Promoting Reading via Enhanced Narrative Absorption and Empathy". *Scientific Study of Literature* 9.2: 162-93.

Code and demo: <https://github.com/fedormyskin/AliceVR>

Data: <https://zenodo.org/record/3706937#.YDF5kC9Q36A>