# Laboratorio di Informatica Umanistica

23 febbraio 2021 Rachele Sprugnoli — <u>rachele.sprugnoli@unicatt.it</u>



### **CHI SONO**











U	niv	er	sit	y	of
		Pi	sa		

Bachelor's and Master's Degree in Humanities Computing

#### CELCT

Center for the Evaluation of Language and Communication Technologies

#### Fondazione Bruno Kessler

Digital Humanities Research Group

#### University of Trento

PhD in Information Technology

#### Catholic University

Interdisciplinary
Research Center
for the
Computerization
of the Signs of
Expression







This project has received funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme – Grant Agreement No 769994

# **CHI SIETE?**

#### **PROGRAMMA**

- Principali argomenti trattati:
  - introduzione all'Informatica Umanistica
  - distant reading e visualizzazione dei dati
  - introduzione al trattamento automatico del linguaggio
  - introduzione alla Network Analysis

# TEORIA + PRATICA USO CRITICO DI STRUMENTI DIGITALI

#### **OBIETTIVI**

- Cosa imparerete a fare:
  - discutere in maniera critica dei principali concetti relativi all'Informatica Umanistica
  - utilizzare una serie di strumenti digitali allo stato dell'arte nel campo dell'Informatica Umanistica
  - creare visualizzazioni di dati e metadati
  - esplorare e annotare corpora di testi
  - produrre analisi linguistiche in maniera automatica
  - creare e analizzare network

## **LOGISTICA**

- ORARIO
  - martedì 14:30-16:30 → SONDAGGIO
- FRUIZIONE
  - Blackboard "Collaborate Ultra"
- RICEVIMENTO
  - alla fine della lezione o su Teams previo appuntamento (scrivere email <a href="mailto:rachele.sprugnoli@unicatt.it">rachele.sprugnoli@unicatt.it</a>)

#### **BIBLIOGRAFIA OBBLIGATORIA**

Testi obbligatori: online / biblioteca / libreria

#### INTRODUZIONE ALL'INFORMATICA UMANISTICA

- Tomasi "Discipline umanistiche e informatica. Quale futuro per l'integrazione?"

#### $\rightarrow$ STORIA

- Salvatori "Digital (Public) History: la nuova strada di una antica disciplina."

#### → LINGUE CLASSICHE

- Passarotti, "Se i Big Data parlano greco e latino"

#### **BIBLIOGRAFIA OBBLIGATORIA**

Testi obbligatori: online / biblioteca / libreria

#### DISTANT READING E VISUALIZZAZIONE DATI

- Jänicke et al., "On Close and Distant Reading in Digital Humanities: A Survey and Future Challenges."

#### **NETWORK ANALYSIS**

- Moretti, "Network theory, plot analysis."

#### LINGUISTICA COMPUTAZIONALE

- Lenci et al., "Testo e computer." Capitoli 1 e 9.

# **INSTALLAZIONE**

#### TUTORIAL

- Sublime Text 3
- LibreOffice Calc
- Java
- Tint
- Gephi
- Recogito: solo registrazione

#### **VALUTAZIONE**

- DUE PARTI
  - 1. elaborato
  - 2. colloquio: sull'elaborato ma anche sui temi presentati a lezione e sui testi in bibliografia obbligatoria
- VOTO
  - approvato / non approvato
- APPELLI
  - 07/06, 23/06, 07/07, 25/08, 08/09 sempre alle 15:00

### **VALUTAZIONE: ELABORATO**

#### COSA FARE:

- 1. porsi una domanda di ricerca
- 2. scegliere dei dati su cui lavorare
- scegliere almeno uno strumento/una metodologia trattato/a durante le lezioni e usarlo/a per rispondere alla domanda di ricerca
- 4. scrivere un elaborato di 5 pagine (formato su Blackboard): abstract, introduzione, dati, esperimento, discussione
- 5. consegnare l'elaborato 7 giorni prima dell'appello

# INTRODUZIONE ALL'INFORMATICA UMANISTICA

#### IL DIGITALE CAMBIA LE DISCIPLINE UMANISTICHE?

- Impatto trasformativo
  - Cosa è l'oggetto di studio (materiali digitalizzati o nati già in formato digitale)
  - Come lavoriamo (metodi diversi, su grande scala, in modo collaborativo)
  - **Chi** può svolgere il lavoro (competenze interdisciplinari, in rete, distribuite)
  - **Perché** lo facciamo (risultati aperti al pubblico)

# PERCHÉ DH?

- 1. Fornire ampio accesso alle informazioni culturali
  - collezioni, archivi ed edizioni digitali
- 2. Manipolare dati per analizzarli in maniera innovativa
  - gestire, modellare, estrarre informazioni
- 3. Cambiare l'insegnamento e l'apprendimento
  - nuovi strumenti da usare in classe
- 4. Trasformare la divulgazione
  - dalla carta al digitale
- 5. Avere un **impatto** pubblico
  - coinvolgere il pubblico con progetti collaborativi

# **QUANDO SONO NATE LE DH?**

# **QUANDO SONO NATE LE DH?**

- 1949: Padre Roberto Busa incontra il presidente di IBM Thomas Watson per chiedere aiuto nell'analisi del lessico di Tommaso d'Aquino
  - analisi lessicografica di 9 milioni di parole
  - dalle schede perforate ai nastri magnetici fino ai CD e al web:

https://www.corpusthomisticum.org/it/index.age





Digital Humanities → Umanistica Digitale
Humanities Computing → Informatica Umanistica

La definizione dell'informatica umanistica come disciplina nella quale interagiscono la scienza dell'informazione, l'utilizzo di sistemi di calcolo e il vasto universo di saperi che appartiene alle scienze umane è, in un certo senso, vera, ma, nello stesso tempo, tanto generica da apparire forse inutile.





#### Manifesto of the Digital Humanities (2010)

For us, the digital humanities concern the totality of the **social sciences and humanities**. The digital humanities are not *tabula rasa*. On the contrary, they rely on all the paradigms, *savoir-faire* and knowledge specific to these disciplines, while mobilizing the tools and unique perspectives enabled by **digital technology**.

The digital humanities designate a "transdiscipline", embodying all the methods, systems and heuristic perspectives linked to the digital within the fields of humanities and the social sciences.



#### The Digital Humanities Manifesto 2.0 (2011)

The revolution is not about transforming literary scholars into engineers or programmers. Rather, it is about:

- expanding the compass and quality of knowledge in the human sciences
- expanding the reach and impact of knowledge in the Humanities disciplines
- direct engagement in design and development processes that give rise to richer, multidirectional models, genres, iterations of scholarly communication and practice



#### a manifesto on manifestos

--definition: a literal handbill, the manifesto reaches out. Its manus is both beckoning and fending off. It is a hand that has started to work the room hard, whether preaching, teaching, laying down or upending the law. Little does it matter if the chosen medium is the voice, the scroll. Things hidden, if not since the body, the printed page, or a pixelated beginning of the world, then at least by the generation of our immediate forebears, are being exposed to the day's harsh light; things that waver between the obvious and the scandalous, the heroic and the silly, the

private and the public. What is urgent is to draw a line--the line between sinners and saints, passéists and futurists—while blurring other lines: between critics and makers, coders and cogitators, scholars and entertainers. If a bit of fun is had along the way, so much the better Time is short; this is a genre in a hurry.

--so: if you are looking for linearity and logic .

The genre here is all M's: mix :: match :: mash :: manifest

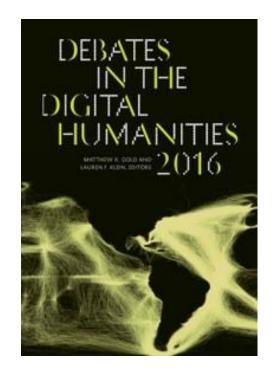
-- and: if you are wondering who is reaching out here, the answer is plural. The Digital Humanities Manifesto 2.0 was preceded by a 1.0 release which prompted commentary and, in

turn, this redrafting. (Will there be a 3.0 release?



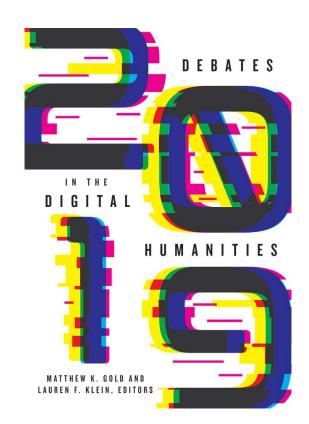
#### **Debates in the Digital Humanities (2016)**

Along with the digital archives, quantitative analyses, and tool-building projects that once characterized the field, DH now encompasses a wide range of methods and practices: visualizations of large image sets, 3D modeling of historical artifacts, "born digital" dissertations, hashtag activism and the analysis thereof, alternate reality games, mobile makerspaces, and more.



#### **Debates in the Digital Humanities (2019)**

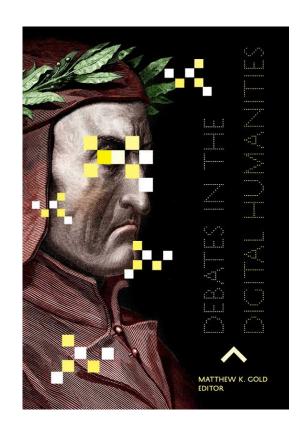
We are convinced that digital humanists can contribute significantly to a larger technically and historically informed resistance. By enabling communication across communities and networks, by creating platforms that amplify the voices of those most in need of being heard, by pursuing projects that perform the work of recovery and resistance, and by undertaking research that intervenes in the areas of data surveillance and privacy, the "artist-theorists, programming humanists, activist-scholars, theoretical archivists, [and] critical race coders".



#### **Debates in the Digital Humanities (2020)**

Rather than debating who is in and who is out, the DH community needs to develop a keener sense of what it stands for and what is at stake in its work. [...] The values of the digital humanities represent a convergence of several sets of values, including those of the humanities; libraries, museums, and cultural heritage organizations; and networked culture.

- Openness
- Collaboration
- Collegiality
- Diversity



## **ASSOCIAZIONI DH NEL MONDO**



#### **COSA SI FA NELLE DH?**

https://dh-abstracts.library.cmu.edu/



#### **COSA SI FA NELLE DH?**

- 3D Modeling
- Black Digital Humanities
- Computational History
- Computational Linguistics
- Corpus Linguistics
- Critical Code Studies
- Cultural Analytics
- DH Feminism
- DH Postcolonialism
- Data Visualization
- Digital Art History
- Digital Editions
- Digital Forensics
- Digital History
- Digital Pedagogy
- Digital Public History

- Digitization
- Distant Reading
- Global Digital Humanities
- HGIS
- Humanities Visualization
- Latinx Digital Humanities
- Machine Learning
- Multilingual DH
- Network Analysis
- Open Data
- Oral History
- Stylometry
- Text Encoding Initiative
- Text Mining and Analytics
- Virtual Reality
- Web Archives



https://cmu-lib.github.io/dhlg/

### **COSA \*NON\* FAREMO**

3D Modeling

**Black Digital Humanities** 

**Computational History** 

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**HGIS** 

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Open Data

Oral History

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Text Encoding Initiative

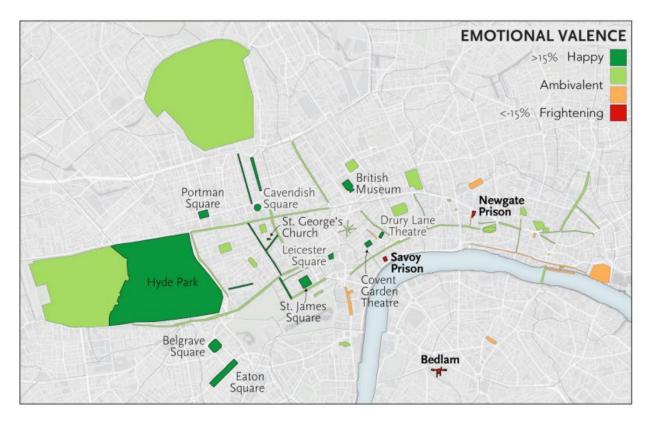
**Text Mining and Analytics** 

Virtual Reality

Web Archives

# **ESEMPI: LETTERATURA INGLESE**

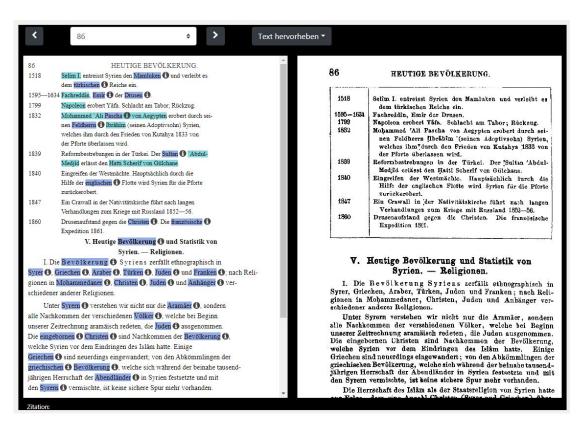
#### **SPATIAL HUMANITIES**



The Emotions of London: studio dei romanzi inglesi 1700-1900 e di come raccontano la geografia londinese

https://litlab.stanford.edu/LiteraryLabPamphlet13.pdf

#### **ESEMPI: LETTERATURA TEDESCA**

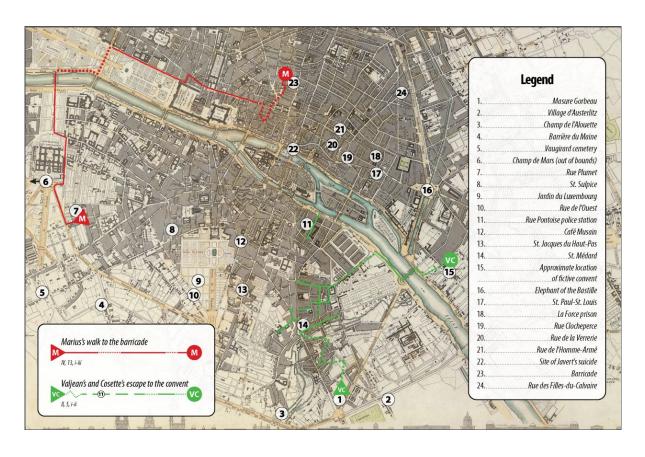


#### travel!digital Corpus

Edizione digitale e analisi di guide di viaggio

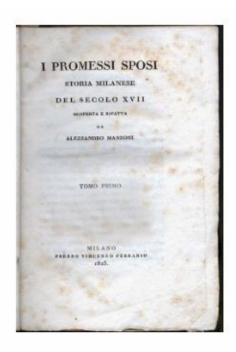
https://traveldigital.acdh.oeaw.ac.at/

### **ESEMPI: LETTERATURA FRANCESE**

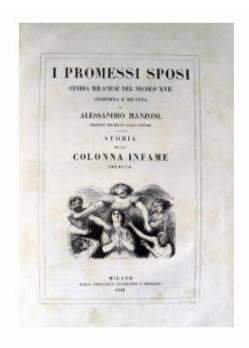


Visualizing Les Misérables
Analisi dell'opera attraverso metodi di data visualization
<a href="https://lesmiserables.mla.hcommons.org/">https://lesmiserables.mla.hcommons.org/</a>

# **ESEMPI: LETTERATURA ITALIANA**



I promessi sposi (1825-1827)



I promessi sposi (1840-1842)

**PhiloEditor** 

Piattaforma di analisi di varianti di testi letterari

http://projects.dharc.unibo.it/philoeditor/

#### **ESEMPI: LETTERATURA ITALIANA**

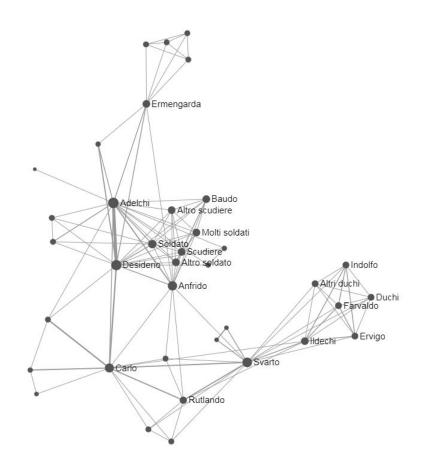


#### Galassia Ariosto

Archivio digitale dei poemi narrativi illustrati tra Cinque e Seicento con navigazione basata sulle immagini

http://galassiaariosto.sns.it

# **ESEMPI: OPERE TEATRALI - 1**



Drama Corpora Project

Analisi di opere teatrali in diverse lingue

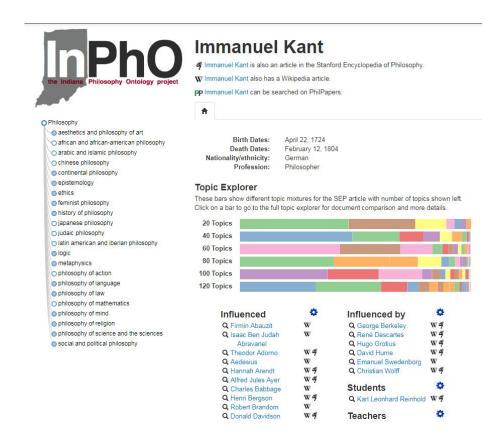
https://dracor.org/

### **ESEMPI: OPERE TEATRALI - 2**

FORESTO  Oh questa sì ch'è bella,	vv. 1-88 omessi	I-FZ53 GB-L55					
	vv. 1-67 omessi	I-CR54					
	vv. 1-105 omessi	I-R59					
	vv. 1-14 omessi	D-M60					
	uguale	I-P49 I-CRE49 I-M50 I-M51 I-B51 I-VE52 NL-L52 I-ESTE52 I-V53 D- H55 D-BN57 I-T57 I-NOV58 SK- BR59 I-G64 I-V70 D-BN71					
	vv. 1-88 omessi	I-FZ53 GB-L55					
2 il padrone di casa	vv. 1-67 omessi	I-CR54					
	vv. 1-105 omessi	I-R59					
	vv. 1-14 omessi	D-M60					
	uguale	I-P49 I-CRE49 I-M50 I-M51 I-B51 I-VE52 NL-L52 I-ESTE52 I-V53 D- H55 D-BN57 I-T57 I-NOV58 SK- BR59 I-G64 I-V70 D-BN71					

Carlo Goldoni - Drammi per musica
Archivio digitale di testi e immagini con analisi di varianti, lessico, metrica
<a href="http://www.carlogoldoni.it/public/index">http://www.carlogoldoni.it/public/index</a>

## **ESEMPI: FILOSOFIA**



The Indiana Ontology Philosophy Project
Analisi di 37 milioni di parole tratte da testi di tema filosofico
<a href="https://inpho.cogs.indiana.edu/">https://inpho.cogs.indiana.edu/</a>

## **ESEMPI: FILOSOFIA**





Cavendish family circle, by Peeter Clouwet, c. 1656.

1645

#### Founding of the "Cavendish Circle" in Paris

William and Margaret Cavendish, along with William's brother Charles, gather a group of well-known exiled English natural philosophers around them in Paris, including Thomas Hobbes, Kenelm Digby and Walter Charleton. Influential French natural philosophers, including René Descartes, Pierre Gassendi, and Marin Mersenne, frequent the circle.



of Var	Van Helmoi Elisabeth's family is exiled into Brandenburg chuman arrives in Birth of Cavend			ins her famil) ue	Elisab with C	Descartes Discourse Method		Desca Mediti	Founding of the "Cavendish Circle" in Paris		" in	Van S the au Opusc	Cavendish publishes two more works		Van Schur Labadie		C R		Van Schur renounces and joins ti
Q Q			evendish	Birth of	n of Conwa	Schur or poem Al  Van Silecturi Vi	El ot Al		C to	Elisab Berlin	Anne l Lady (	Cave	Robert Hooke publishes Micrographia			Boyle Usefu Philos		Elisab Abbes	Van H Conw
OT MC	Birth of Elisal Princess of B		Birth of Boyle				Vitae			Birth of Le	Elisab Heidel		endish publishe Birth o works	Birth of M	lashai	CP	G C	C G P	Elisabe Maria v her felk

#### Project Vox

Piattaforma per lo studio del pensiero di donne filosofe <a href="http://projectvox.org/">http://projectvox.org/</a>

# **ESEMPI: STORIA DELL'ARTE**

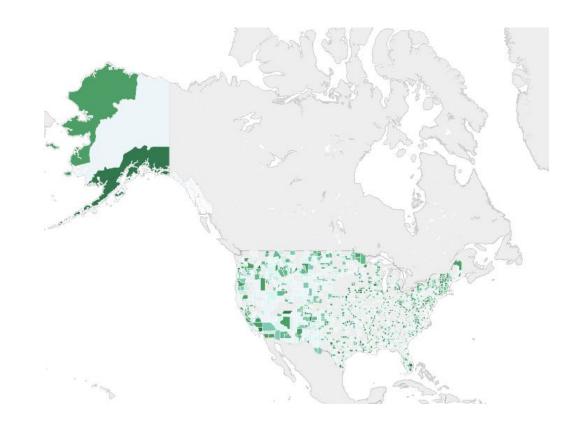


Digital Sculpture

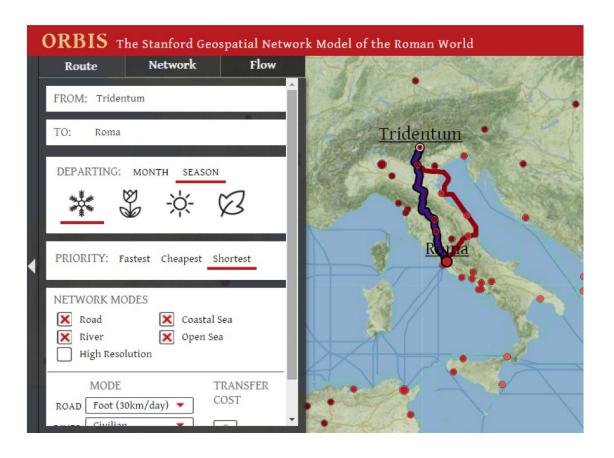
Modelli digitali 3D di statue

<a href="http://www.digitalsculpture.org/">http://www.digitalsculpture.org/</a>

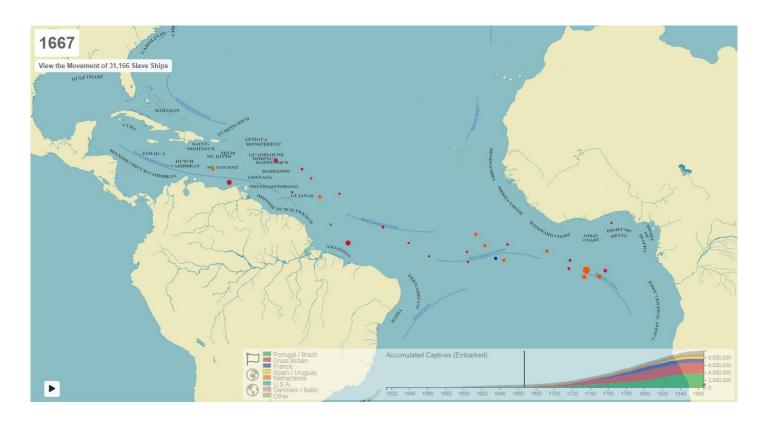
# **ESEMPI: STORIA DELL'ARTE**



Photogrammar
Piattaforma per esplorare un archivio 170.000 fotografie
<a href="http://photogrammar.yale.edu/">http://photogrammar.yale.edu/</a>



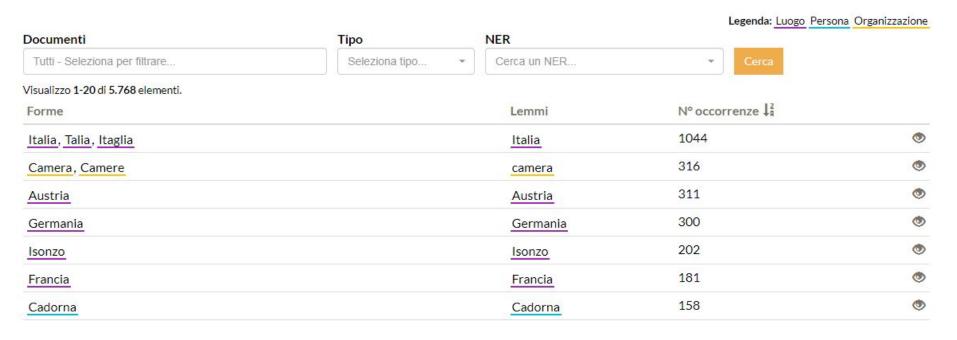
# Orbis Il Google Maps dell'antichità <a href="https://orbis.stanford.edu/">https://orbis.stanford.edu/</a>



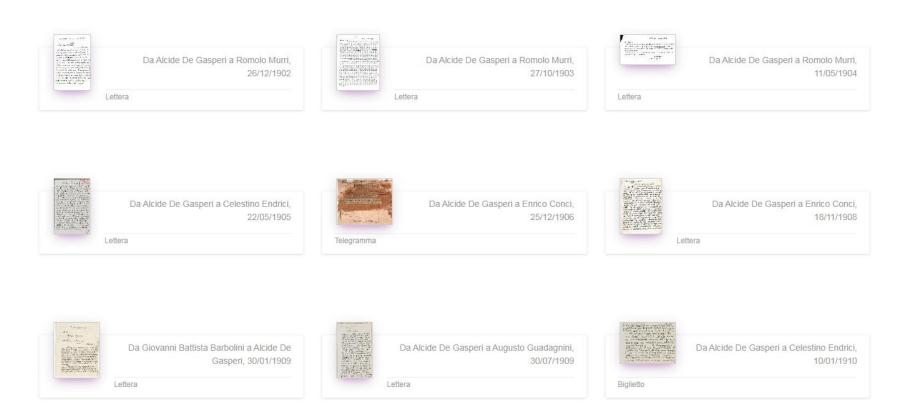
### Slave Voyages

Database sul commercio di schiavi transatlantico e intra-americano <a href="https://slavevoyages.org/">https://slavevoyages.org/</a>

#### Nomi propri



Voci della Grande Guerra
Corpus di testi e analisi linguistiche
<a href="http://www.vocidellagrandeguerra.it/">http://www.vocidellagrandeguerra.it/</a>



#### Epistolario De Gasperi

Archivio digitale con testi trascritti e annotati

https://epistolariodegasperi.it/?#/archivio\_digitale/lettere

#### **ESEMPI: FILOLOGIA**



Codice Pelavicino

Edizione digitale con trascrizioni e annotazioni

https://pelavicino.labcd.unipi.it/

#### **ESEMPI: FILOLOGIA**

#### Book 1



Άθήναιος μὲν ὁ τῆς βίβλου πατήρ∙ ποιεῖται δὲ τὸν λόγον πρὸς Τιμοκράτην · Δειπνοσοφιστής δὲ ταύτη τὸ ὅνομα. ὑπόκειται δὲ τῶ λόγω Λαρήνσιος Ρωμαῖος, άνὴρ τῆ τύχη περιφανής, τοὺς κατά πᾶσαν παιδείαν έμπειροτάτους έν τοῖς αὐτοῦ δαιτυμόνας ποιούμενος έν οίς ούκ έσθ' οὖτινος τῶν καλλίστων ούκ έμνημόνευσεν, ίχθῦς τε γὰρ τῆ βίβλω ένέθετο καὶ τὰς τούτων χρείας καὶ τὰς τῶν ὁνομάτων ἀναπτύξεις καὶ λαχάνων γένη παντοῖα καὶ ζώων παντοδαπῶν καὶ ἄνδρας Ιστορίας συννεγραφότας καὶ ποιητάς καὶ φιλοσόφους καὶ ὅργανα μουσικὰ καὶ σκωμμάτων είδη μυρία καὶ έκπωμάτων διαφοράς καὶ πλούτους βασιλέων διηγήσατο καὶ νηῶν μεγέθη καὶ ὄσα ἄλλα ούδ' αν εύχερῶς ἀπομνημονεύσαιμι, ἡ ἐπιλίποι μ' αν ἡ ἡμέρα κατ' είδος διεξερχόμενον, καί έστιν ή τοῦ λόγου οίκονομία μίμημα τῆς τοῦ δείπνου πολυτελείας καὶ ή τῆς βίβλου διασκευή τῆς έν τῷ δείπνῳ παρασκευῆς, τοιοῦτον ὁ θαυμαστὸς οὖτος τοῦ λόγου οίκονόμος Άθήναιος ἤδιστον λογόδειπνον είσηγεῖται κρείττων τε αὐτὸς ἐαυτοῦ γινόμενος, ὤσπερ οἱ Άθήνησι ῥήτορες, ὑπὸ τῆς ἐν τῶ λέγειν θερμότητος πρὸς τὰ ἐπόμενα τῆς βίβλου βαθμηδὸν ύπεράλλεται.

# Olson Index Larensius of Rome Timocrates

Aemilianus Maurus Archilochus of Paros Leonides of Elis Masurius Plutarch of Alexandria Zoilus

#### Kaibel Index Scriptorum οἱ μετ' Άρχίλοχον ποιηταί

AEMILIANVS LEONIDAS MASVRIVS PLVTARCHVS

ATHENAEVS

TIMOCRATI

Kaibel Dialogi Personae

Meineke Index Scriptorum Athenaeus

#### Digital Athenaeus

Edizione digitale dell'opera "Deipnosofisti" di Ateneo di Naucrati <a href="http://digitalathenaeus.org/">http://digitalathenaeus.org/</a>

#### **APPROFONDIMENTI**

A Companion to Digital Humanities (2004):

http://www.digitalhumanities.org/companion/

Humanities Computing as Digital Humanities (2009):

http://www.digitalhumanities.org/dhq/vol/3/3/000065/000065.html

Manifesto of the Digital Humanities (2010): <a href="https://tcp.hypotheses.org/411">https://tcp.hypotheses.org/411</a>

The Digital Humanities Manifesto 2.0 (2011):

https://jeffreyschnapp.com/wp-content/uploads/2011/10/Manifesto V2.pdf

Debates in the Digital Humanities (2016):

https://dhdebates.gc.cuny.edu/projects/debates-in-the-digital-humanities-2016

Debates in the Digital Humanities (2019):

https://dhdebates.gc.cuny.edu/projects/debates-in-the-digital-humanities-2019

Debates in the Digital Humanities (2020):

https://dhdebates.gc.cuny.edu/projects/debates-in-the-digital-humanities



# **GRAZIE!**

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Twitter: @RSprugnoli



