

Arcangelo Massari

PhD candidate in Digital Humanities



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EDUCATION AND TRAINING

Nov 2022 - Present

PhD in cultural heritage in digital ecosystem

University of Bologna

Doctoral research focusing on creating user-friendly interfaces for semantic data, specifically Semantic Web technologies with emphasis on change tracking and provenance. The main focus is [HERITRACE](#), which won the [Gigliozzi Prize](#) for best presentation at AIUCD 2024 conference. More info: [PhD program](#).

Mar 2023 - Present

PhD in engineering technology

KU Leuven (Belgium)

Joint doctoral program focusing on Knowledge Graph Inversion, extending [RDF Mapping Language \(RML\)](#) to enable recovery of original data after RDF transformation. More info: [KU Leuven profile](#).

Aug 2019 - Nov 2021

Master's degree in digital humanities and digital knowledge

University of Bologna

Graduated summa cum laude (110/110). Thesis: '[A methodology and an implementation to perform live time-traversal queries on RDF datasets](#)'. Developed a methodology for time-traversal queries on RDF datasets, focusing on change tracking and provenance in the Semantic Web.

Aug 2017 - Nov 2019

Bachelor's degree in letters - modern curriculum

University of Bologna

Graduated summa cum laude (110/110). Thesis: '[Valorizzare il sapere digitale: un esperimento di progettazione](#)'. Created a digital collection of Italian poetry from the 14th to 20th century, exploring new perspectives for text visualization and analysis.

WORK EXPERIENCE

Oct 2022 - Present

Teaching tutor

University of Bologna

Laboratory sessions for [Computational Management of Data](#) in the Master's degree in [Digital humanities and digital knowledge](#) at the University of Bologna.

Nov 2021 - Oct 2022

Research fellow

Research Centre for Open Scholarly Metadata (University of Bologna)

Involved in the [OpenAIRE-Nexus](#) project and developed software to integrate open citations from [OpenCitations](#) into the European Open Science Cloud.

CONFERENCES AND SEMINARS

May 5-10, 2025

Una Europa PhD workshop - 'Museums and the new challenges'

Bologna, Italy

Participation in the Una Europa transdisciplinary workshop for PhD students focused on 'Museums and the new challenges: virtual technologies, societal responsibility and environmental sustainability'. Presentation titled 'HERITRACE: A User-Friendly Semantic Data Editor with Change Tracking and Provenance Management for Cultural Heritage Institutions'. [Workshop info](#) | [Presentation](#)

May 28-30, 2024

AIUCD conference 2024 - Catania

Catania, Italy

Participated in the Association for Digital Humanities and Digital Culture (AIUCD) conference in Catania with a contribution titled 'HERITRACE: Tracing Evolution and Bridging Data for Streamlined Curatorial Work in the GLAM Domain'. [Conference](#) | [Paper](#) | [Presentation](#)

Oct 24-27, 2023

Hackathon 'Mapping the Impact of Research Software in Science'

Redwood City, California, USA

Participated in the hackathon hosted by Chan Zuckerberg Initiative, focusing on integrating data models from three software mention collections: SoMeSci, Softcite and RRID. Created a mapping table that served as a starting point for creating a 'gold dataset' aimed at improving software mention extraction in scientific literature. [Repository](#)

Jul 10-15, 2023

ADHO Digital Humanities conferences 2023 in Graz

Graz, Austria

Participated in the ADHO Digital Humanities conferences 2023 with a contribution titled 'Representing provenance and track changes of cultural heritage metadata in RDF: a survey of existing approaches'. [Conference](#) | [Paper](#) | [Presentation](#)

Mar 21-23, 2023

20th Research Data Alliance plenary meeting in Göteborg

Göteborg, Sweden

Participated in the 20th plenary meeting of the Research Data Alliance with a contribution titled 'Adopting the Scientific Knowledge Graphs Interoperability Framework in OpenCitations'. [Conference](#) | [Presentation](#)

SKILLS

Programming languages

Python JavaScript TypeScript Dart

Markup & templating

HTML XML TEI

Styling & design

CSS SASS Bootstrap

Query & transform

SPARQL SQL XPath XQuery XSLT

Semantic web & RDF

RDF SPARQL SHACL Apache Jena Fuseki GraphDB BlazeGraph
OpenLink Virtuoso

Frontend libraries

React D3.js Flutter

Backend frameworks

Node.js Flask Prisma ORM

Databases

MongoDB PostgreSQL Redis Apache Jena Fuseki BlazeGraph
OpenLink Virtuoso GraphDB

Infrastructure & DevOps

Docker Proxmox GitHub Actions

Operating systems

Debian Fedora

PUBLICATIONS

JOURNAL ARTICLE

2025 - Representing provenance and track changes of cultural heritage metadata in RDF: a survey of existing approaches

Digital Scholarship in the Humanities, pp. fqaf076

[View Article](#)

2025 - A reproducible workflow for the creation of digital twins in the cultural heritage domain

Transformations: A DARIAH Journal, Workflows, (Image-based workflows), pp. 14773

[View Article](#)

2025 - HERITRACE: A User-Friendly Semantic Data Editor with Change Tracking and Provenance Management for Cultural Heritage Institutions

Umanistica Digitale, 9, (20), pp. 317-340

[View Article](#)

2024 - A Proposal for a FAIR Management of 3D Data in Cultural Heritage: The Aldrovandi Digital Twin Case

Data Intelligence, 6, (4), pp. 1190-1221

[View Article](#)

2024 - OpenCitations Meta

Quantitative Science Studies, 5, (1), pp. 50-75

[View Article](#)

2024 - The Integration of the Japan Link Center's Bibliographic Data into OpenCitations

Journal of Open Humanities Data, 10, pp. 21

[View Article](#)

2024 - Saving temporary exhibitions in virtual environments: The Digital Renaissance of Ulisse Aldrovandi - Acquisition and digitisation of cultural heritage objects

Digital Applications in Archaeology and Cultural Heritage, 32, pp. e00309

[View Article](#)

2022 - Identifying and correcting invalid citations due to DOI errors in Crossref data

Scientometrics, 127, (6), pp. 3593-3612

[View Article](#)

CONFERENCE PAPER

2022 - How to structure citations data and bibliographic metadata in the OpenCitations accepted format

ULITE 2022, 3220

[View Paper](#)

2022 - Toward a Comparison Framework for Interactive Ontology Enrichment Methodologies

International Semantic Web Conference, 3253, pp. 10

[View Paper](#)

BOOK SECTION

2022 - Enabling Portability and Reusability of Open Science Infrastructures

Linking Theory and Practice of Digital Libraries, 13541, pp. 379-385

[View Chapter](#)

THESIS

2021 - A methodology and an implementation to perform live time traversal queries on RDF datasets

Alma Mater Studiorum Università di Bologna, Bologna

[View Thesis](#)

2019 - Valorizzare il sapere digitale: un esperimento di progettazione

Alma Mater Studiorum Università di Bologna, Bologna

[View Thesis](#)

PRESENTATION

2025 - Presentation of "HERITRACE: A User-Friendly Semantic Data Editor with Change Tracking and Provenance Management for Cultural Heritage Institutions"

Una Europa PhD Workshop: Museums and new challenges, Bologna

[View Presentation](#)

2024 - Presentazione di "HERITRACE: Tracciare l'Evoluzione e Integrare Dati per una Curatela Efficace nel Settore GLAM"

AIUCD 2024, Catania

[View Presentation](#)

2023 - Git Systems

Crash course of the master's degree in Digital Humanities and Digital Knowledge at the University of Bologna, Bologna

[View Presentation](#)

2023 - Digitisation of Temporary Exhibitions: the Aldrovandi Case

GCH23 - Eurographics Workshop on Graphics and Cultural Heritage, Lecce

[View Presentation](#)

REPORT

2021 - Plain X: re-design of the Paneangeli mobile application

Alma Mater Studiorum Università di Bologna, Bologna

[View Report](#)

2019 - Network analysis of the characters in A Game of Thrones: seeking for a predictive model of their death

Alma Mater Studiorum Università di Bologna, Bologna, pp. 7

[View Report](#)

SOFTWARE

2025 - opencitations/heritrace: v2.3.3

[View Software](#)

2025 - opencitations/time-agnostic-library: 5.0.4

[View Software](#)

2025 - opencitations/oc_meta: v2.1.3

[View Software](#)

2021 - open-sci/2020-2021-grasshoppers-code: Classes of errors in DOI names

[View Software](#)

2021 - arcangelo7/gen-0.github.io: 1.0.0

[View Software](#)

2021 - arcangelo7/TechWeb: 1.0.0

[View Software](#)

2021 - arcangelo7/mmmm: 1.0.0

[View Software](#)

2021 - arcangelo7/Meta-Analyser-Tool: 1.0.0

[View Software](#)

2021 - arcangelo7/maderna-animation: 1.0.0

[View Software](#)

2021 - arcangelo7/collezione-digitale-poesie: 1.0.1

[View Software](#)

2021 - arcangelo7/ada-lodlace.github.io: 1.0.1

[View Software](#)

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Bologna, 8/8/2025

Arcangelo Massari