



Federico Croce

ABOUT ME

My research activities concentrated on finding new applications of the Ontology-Based Data Management paradigm related to the Explainable Artificial Intelligence.

EDUCATION AND TRAINING

2017 - 2022 - Rome, Italy

● **Ph.D in Engineering in Computer Science**

Sapienza University of Rome

My research interests are at the intersection of deductive and inductive-based reasoning systems. During the PhD, my research has been focused on the application of Semantic Technologies as a means for explaining Machine Learning-based models.

Address Rome, Italy | **Field of study** Artificial Intelligence | **Thesis** Explaining Datasets in Ontology-based Data Management

2015 - 2017 - Rome, Italy

● **Master of Science in Engineering in Computer Science**

Sapienza University of Rome

110/110 cum laude

Excellence Path

Grading in list: 1st

"Excellence Path" of the master degree in Engineering in Computer Science. During the Path I worked with Semantic Technologies applied to database systems.

Address Rome, Italy

2012 - 2015 - Rome, Italy

● **Bachelor Degree in Engineering in Computer Science**

Sapienza University of Rome

110/110 cum laude

Excellence Path

"Excellence Path" of the bachelor degree in Engineering in Computer Science. During the Path I wrote a report on the technologies behind computer chess programs and I developed a facial recognition tool to be used as a login facility.

Address Rome, Italy

WORK EXPERIENCE

04/2022 - CURRENT - Rome, Italy

● **Research Fellow at the Department of Computer, Control, and Management Engineering**

Sapienza University of Rome

The research topic is at the intersection of Knowledge Graphs and Deep Learning, to develop new techniques for Explainable Artificial Intelligence (XAI).

04/30/2021 - 04/29/2022 - Rome, Italy

● **Research fellow for the Department of Translational and Precision Medicine**

Sapienza University of Rome

The research have been focused on innovative data preparation and management solutions based on the use of ontologies and semantic technologies in the healthcare domain.

12/2019 – 11/2021 – Rome, Italy

● **Head of Artificial Intelligence**

GMATICS S.r.l.

Design, implementation and management of Artificial Intelligence solutions to remote sensing with satellites and airborne imageries.

09/2018 – 10/2019 – Pasadena, United States

● **AI Researcher**

NASA Jet Propulsion Laboratory

Application of Machine Learning solutions to remote sensing with satellites and airborne imageries. Collaboration in the joint ESA/NASA Multi-Mission Algorithm and Analysis Platform (MAAP)

10/2017 – CURRENT

● **Data Engineer for OBDA Systems**

OBDA Systems

Data Engineer for the Sapienza startup OBDA Systems. The business value of the startup is to propose state-of-the-art solutions based on the most recent innovations in the field of semantic technologies to provide its clients with a direct and effective means for extracting key data from large and complex datasets.

Address Rome, Italy

11/2017 – CURRENT

● **Teaching Assistant in Engineering in Computer Science**

Sapienza - University of Rome

- Teaching of laboratory lessons
- Preparing and checking Homeworks and Assignments
- Office Hours

Address Rome, Italy

HONOURS AND AWARDS

● **Honours and awards**

19/06/2015

honour scholarship, "alla memoria dei Coniugi Ernesto e Iole DE MAGGI"
www.fondazioneSapienza.uniroma1.it/

PUBLICATIONS

● **(Under review) Separability and its Approximations in Ontology-based Data Management**

2022

G. Cima, F. Croce, M. Lenzerini

Semantic Web Journal

● **Query Definability and Its Approximations in Ontology-based Data Management**

2021

G. Cima, F. Croce, M. Lenzerini

30th ACM International Conference on Information & Knowledge Management

● **Explaining Classifiers in Ontology-Based Data Access**

2020

F Croce, M Lenzerini

Workshop XLoKR at the 17th International Conference on Principles of Knowledge Representation and Reasoning (KR2020)

● **Ontology-based explanation of classifiers**

2020

F Croce, G Cima, M Lenzerini, T Catarci

2nd International Workshop on Processing Information Ethically at EDBT/ICDT.

● **On Queries with Inequalities in DL-Lite^R.**

2019

G Cima, F Croce, M Lenzerini, A Poggi, E Toccaceli

32nd International Workshop on Description Logics (DL2019)

● **A Framework for Explaining Query Answers in DL-Lite**

2018

F Croce, M Lenzerini

21st International Conference on Knowledge Engineering and Knowledge Management (EKAW2018)

● **On the Experimental Usage of Ontology-based Data Management for the Italian Integrated System of Statistical Registers: Quality Issues**

2018

F Croce, DF Savo, M Lenzerini, et al.

European Conference on Quality in Official Statistics (Q2018)

CONFERENCES AND SEMINARS

● **Conferences**

4-th International Winter School on Big Data (BigDat2018), Timisoara, Romania

The winter school will take place from 22/01 to 26/01 2018. The lectures will be:

- Big Data in biomedical science
 - MapReduce algorithms for Big Data
 - Semantic Technologies for Open data publishing
 - Unstructured Big Data
- and more.

Curatorship: Jeffrey Ullman (Stanford University)

Character: Student

<http://grammars.grlmc.com/BigDat2018/index.php>

Reasoning Web Summer School (RW 2017), University of Birbeck, Londra

The summer school took place from 7/7 to 11/7 2017. The lectures were:

- Semantic Data Integration on the Web of Open Data
 - Ontological query answering over semantic data
 - Integrating Relational Databases with the Semantic Web
 - OBDA for log extraction in process mining
- and more.

Curatorship: Domenico Lembo, Università La Sapienza - Roma

Character: Student

Extending Database Technologies Summer School (EDBT 2017) , Nervi (GE) , Genova

The summer school took place from 4/9 to 8/9 2017. The lectures were:

- Crowd Data Sourcing
 - Query Answering
 - Intelligent Web Extraction
 - Data Quality
 - Data Integration
- and more.

Curatorship: Georg Gottlob, Oxford University, UK

Character: Student

<http://edbtschool2017.dibris.unige.it/>

LANGUAGE SKILLS

MOTHER TONGUE(S): Italian

OTHER LANGUAGE(S):

English

Listening
C2

Reading
C2

**Spoken
production**
C2

**Spoken
interaction**
C2

Writing
C2

DRIVING LICENCE

● **Driving Licence:** A

● **Driving Licence:** B

JOB-RELATED SKILLS

● **Job-related skills**

Good teaching and mentoring skills. Propensity for research and study. Self-reliant and reliable in carrying out duties. Good exposition and public presentation skills.

OTHER SKILLS

● **Other skills**

Scout AGESCI since 2004. Black belt first DAN Karate (SHOTOKAN) since 2010. PADI Advanced Open Water Diver since 2015. 6 years of musical studies both theoretical and practical (Piano and Guitar). Agonistic swimmer and short CONI experience. BLS-D (Basic Life Support and Defibrillation) certificate released by Croce Rossa Italiana, May 2017. Amateur Photographer. International Sailing license since 2021.

VOLUNTARY WORK EXPERIENCES ABROAD

● **Studies and experiences abroad**

2011:

Voluntary work at Brighton & Hove Wood Recycling Project

<https://www.woodrecycling.org.uk/>

Place: **Brighton (United Kingdom)** | Language: English | Duration: 3 (months)