

## ● WORK EXPERIENCE

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01/01/2022 – CURRENT – Torino, Italy

### **RESEARCH FELLOW (ASSEGNISTA DI RICERCA) – UNIVERSITÀ DEGLI STUDI DI TORINO**

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Position focused on the application of Data Science and Network Analysis techniques in the area of Urban Science and Computational Social Sciences.

2019 – 2020 – Torino, Italy

### **UNIVERSITY TEACHING ASSISTANT – UNIVERSITÀ DEGLI STUDI DI TORINO**

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Lecturer for the module "Application to Social Media" of the II level Master in Techniques for Artificial Intelligence in the years 2019 and 2020.

10/2019 – 10/2020

### **RESEARCH SCHOLAR – UNIVERSITÀ DEGLI STUDI DI TORINO**

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Participating in a project whose goal is to develop a Deep Learning tool for the Italian National TV RAI that automatically detects emotions expressed by the users posting on RAI's social media feed.

01/11/2018 – 31/10/2019

### **JUNIOR RESEARCHER – FONDAZIONE ISI**

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Junior Researcher at the ISI Foundation: winner of an annual research scholarship (assigned by merit ranking) as part of the Lagrange Project, in collaboration with the CRT Foundation. During the research period at the ISI Foundation I carry out various research projects, whose common thread is the theme "Data Science for Social Good".

Torino, Italy

01/10/2018 – 30/11/2018

### **ADJUNCT PROFESSOR – UNIVERSITÀ DEGLI STUDI DI TORINO**

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Teacher of the Machine Learning and Data Mining course within the Master in Data Science for Business Intelligence (1st level Master) organized by the Department of Economics and Statistics "Cognetti De Martiis" of the University of Turin.

The course focuses on the theory of complex networks, with particular attention to application aspects and case studies, especially concerning the modeling and analysis of data obtained through API and / or web scraping of social networks and online platforms.

Torino, Italy

01/03/2018 – 31/07/2018 – Torino, Italy

### **RESEARCH SCHOLAR – UNIVERSITÀ DEGLI STUDI DI TORINO**

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Research fellow on the topic "ANALYSIS OF WEB AND TELEPHONE TRAFFIC DATA FOR THE STUDY OF COMPUTATIONAL SOCIAL SCIENCE PROBLEMS". The work, carried out at the University of Turin in collaboration with the Instituto de Data Science of the Universidad del Desarrollo (Santiago De Chile), consisted in the application of machine learning, data mining and network analysis techniques for the

study of a dataset containing information, suitably anonymized, on web and telephone traffic of an important Chilean provider.

Torino, Italy

## ● EDUCATION AND TRAINING

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03/12/2018 – 14/06/2022 – Torino, Italy

**PHD IN COMPUTER SCIENCE** – Università degli Studi di Torino

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My PhD program focuses on the study of issues related to segregation in social networks. The goal is to deepen the dynamics that link segregation in communities and distinct groups, with the polarization in debates and the radicalization of ideologies and, in this context, to understand how the public interfaces with news and mass media. To this end, I make extensive use of data from social media, network analysis techniques as well as Natural Language Processing.

### **Field(s) of study**

- Computer Science

EQF level 8

2015 – 2018 – Torino, Italy

**LAUREA MAGISTRALE IN FISICA DEI SISTEMI COMPLESSI** – Università degli Studi di Torino

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Study of advanced topics of statistical physics, stochastic processes and dynamical systems. Study of modeling techniques for complex systems and their application in physics, finance and social sciences. Study and use of numerous programming languages and machine learning and data mining techniques.

EQF level 7

2010 – 2015 – Lecce, Italy

**LAUREA TRIENNALE IN FISICA** – Università del Salento

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EQF level 6

2005 – 2010 – Lecce, Italy

**DIPLOMA DI MATURITÀ CLASSICA** – Liceo Classico Giuseppe Palmieri

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EQF level 4

## ● LANGUAGE SKILLS

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Mother tongue(s): **ITALIANO**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
<b>ENGLISH</b>	C1	C2	C1	C1	C1
<b>FRENCH</b>	A2	B2	A1	A2	B1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

## ● DIGITAL SKILLS

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Machine Learning | NLP Machine Learning | Network Analysis | Microsoft Office | Python | SQL | Data Science | Scikit-Learn | Pandas | Numpy | Microsoft Excel | Jupyter Notebook | Data Analysis | Data Visualization | Artificial Intelligence | Microsoft Azure | Microsoft Power BI | Data Modeling | Complex Systems

## ● PUBLICATIONS

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### Publications

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DOI: 10.1140/epjds/s13688-020-00228-9

<https://epjdatascience.springeropen.com/articles/10.1140/epjds/s13688-020-00228-9> – 2020

Vilella, Salvatore, Paolotti, Daniela, Ruffo, Giancarlo, Ferres, Leo (2020). News and the city: understanding online press consumption patterns through mobile data. EPJ DATA SCIENCE, vol. 9, p. 1-18, ISSN: 2193-1127, doi: 10.1140/epjds/s13688-020-00228-9

### Visualising and comparing emotion-annotated corpora

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<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0256503> – 2021

Semeraro, A., Vilella, S., & Ruffo, G. (2021). PyPlutchik: Visualising and comparing emotion-annotated corpora. *Plos one*, 16(9), e0256503. ISO 690

### Immigration as a Divisive Topic: Clusters and Content Diffusion in the Italian Twitter Debate

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[doi.org/10.3390/fi12100173](https://doi.org/10.3390/fi12100173) – 2020

Vilella, S., Lai, M., Paolotti, D., & Ruffo, G. (2020). Immigration as a divisive topic: Clusters and content diffusion in the Italian Twitter debate. *Future Internet*, 12(10), 173.

## ● CONFERENCES AND SEMINARS

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### Conferences

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*Contributed talk* at European Symposium Series on Societal Challenges in Computational Social Science (EuroCSS), about Polarization and Radicalization (Zurigo, 2 - 4 Settembre 2019).

## Workshop

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*Invited speaker* at the workshop "Complex networks: from socio-economic systems to biology and brain", Lipari International School, from 10 to 16 July 2018. Title of the talk: "Visitation patterns to news media websites: a data-driven approach to the study of political polarization"

Lyon, FR

## Conferences

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*Contributed Talk* at the Conference on Complex Systems 2021, October 2021, Lyon (France): "PyPlutchik: Visualising and comparing emotion-annotated corpora"

Rome, IT

## Conferences

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*Poster* at NetSci 2020, September 2020, Rome (Italy): "Immigration in the Italian public debate: dynamics of interaction on social media"

Madrid, ES

## Conferences

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*Contributed talk* at Complex Networks 2020, December 2020, Madrid (Spain): "Immigration in the Italian Public Debate: Dynamics of Interactions in a Segregated Network"

## ● ORGANISATIONAL SKILLS

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### Organisational skills

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- Excellent organizational and management skills, acquired both during my studies and during my experience as a researcher at the ISI Foundation and at the Computer Science Department of the University of Turin.

## ● COMMUNICATION AND INTERPERSONAL SKILLS

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### Communication and interpersonal skills

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- excellent communication skills on scientific topics and conceptually and technically complex topics, obtained during my university studies and during the research period at the Computer Science Department of the University of Turin and at the ISI Foundation.

## ● **JOB-RELATED SKILLS**

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### **Job-related skills**

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- good command of data analysis techniques, acquired during university studies;
- experience in data mining and data analytics, acquired during university studies and significantly enriched during the research period at the Computer Science Department of the University of Turin. The collaboration with the ISI Foundation and with the Instituto de Data Science of Santiago De Chile allowed me to deal with a great variety of real datasets, also coming from companies, with the aim of solving concrete problems;
- proven experience in managing and studying data from social media, with particular attention to Twitter. During my time at the ISI Foundation I studied a vast corpus of tweets in Italian, to analyze the public debate around the issue of immigration. For this purpose I used both network analysis techniques, to detail the interactions between the different actors of the debate and identify community structures, and NLP techniques, to define the interactions between communities from a linguistic and thematic point of view.
- good knowledge of complex networks and their implementation from a computational point of view. To the in-depth theoretical studies I have added, during my work experience, a frequent use of networks as an empirical model for the study of complex systems;
- good command of Python and related packages dedicated to data science (pandas, numpy, geopandas), machine learning (scikit-learn, tensorflow), network analysis (networkx, igraph, networkit) and data visualization (matplotlib, plotly), and tools such as Gephi, R, QGIS.
- experience in the use of relational databases and SQL language, also for the management of databases on cloud platforms such as Microsoft Azure