



## Davide Mauro Ferrario

**Nationality:** Italian

**Skype:** dmferrario

**Date of birth:** 09/11/1991

**Gender:** Male

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### WORK EXPERIENCE

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#### PhD in Sustainable Development and Climate Change

**CMCC@CaFoscari** [ 01/11/2021 – Current ]

**City:** Venezia

**Country:** Italy

Within the “Earth System and Environment” curricula of the National Doctorate on Sustainable Development and Climate Change, my research topic will be: “Advancing multi-risk assessment for sustainable climate change adaptation”, and Prof. Andrea Critto will be my supervisor. In particular, my research will focus on Machine learning and AI applications for multi-risk and multi-hazard assessment on terrestrial, marine and coastal environments, and I will also collaborate on ongoing research projects, such as Adriaclim and Myriad.

#### Research manager and Project manager

**Zanasi & Partners** [ 10/09/2018 – 31/10/2021 ]

**City:** Modena

**Country:** Italy

Project manager and research manager for Zanasi & Partners. Managing project activities for Z&P as task leader and work package leader. Coordinating and writing new research proposals under H2020, Horizon Europe and EIC frameworks on topics such as Disaster Resilient Infrastructures, Cybersecurity, European Green Deal and Pathfinder.

The research activities are carried out within the following research projects:

**FINSEC** (2018-2021, <https://www.finsec-project.eu/>): "Integrated Framework for Predictive and Collaborative Security of Financial Infrastructures", started in May 2018 and finished in April 2021, is an H2020 Innovation Action project on cyber-physical security of Financial Infrastructures.

**Role:** Work Package 8 leader (Communication, Dissemination and Exploitation). I created the project website and coordinated the dissemination activities of the project, including the formation and organization of workshops for the ECSCI (European Cluster for Securing Critical Infrastructures) cluster, a collaborative framework of 20 H2020 projects created within the FINSEC project, dealing with Critical Infrastructure Protection and Cyber-Physical attacks. I also collaborated to the development and testing of Artificial Intelligence and Deep Learning (Neural Networks) algorithms for predictive analytics in financial use cases, working with Keras and TensorFlow libraries.

**ECHO** (2019--> <https://echonetwork.eu/>): "European Network of Cybersecurity Centres and Competence Hub for Innovation and Operations", started in February 2019 and will finish in January 2022, is one of the four pilot projects with the objective of connecting and sharing knowledge across multiple domains to develop a common cybersecurity strategy for Europe, developing a European Cybersecurity ecosystem, through effective and efficient multi sector and multi-domain collaboration.

*Role:* I collaborated to research activities on NoSQL data models for mapping Cyber Ranges capabilities and on CVE (Common Vulnerabilities and Exposures) and CWE (Common Weakness Enumeration).

**SOCIAL TRUTH** (2018--> <http://www.socialtruth.eu/>), started in December 2018 and will finish in November 2021, is a H2020 research and innovation project aimed at developing and delivering a distributed solution (based on blockchain technology) to achieve both content and author credibility verification and detection of fake news, thus increasing the trust in Social Media.

*Role.* I contributed to data management while ensuring the project alignment to GDPR (Zanasi & Partners was Data Protection Officer).

**SILVANUS** (expected to start in November 2021): "Integrated Technological and Information Platform for Wildfire Management". Newly funded Green Deal project focusing on wildfire risk assessment and modelling, forest management and restoration, in which Zanasi & Partners will be scientific and technical coordinator.

*Role.* I contributed to the writing of the proposals and the definition of the consortium, especially with regards to extra EU partners and fire fighters' organisations. During the project Z&P will also take care of the management of IPR and restoration governance models.

## **EDUCATION AND TRAINING**

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### **Master of Sciences in Mathematics**

**Università degli Studi di Bologna** [ 01/2015 – 03/2018 ]

<https://www.unibo.it/it> **Final grade** : 110/110 e lode

**Thesis:** Symmetry and dynamics in a simplified model for transposons

I focused my studies on mathematical physics and information theory; specifically, within my master thesis I started from a biological problem i.e., the emergence of Chargaff's second parity rule in DNA sequences, to build a simplified mathematical model supporting the investigation of dynamics of the action of transposons and its correlation with the emergence of Chargaff's parity at non asymptotic times.

### **Erasmus Student**

**Cardiff University** [ 01/01/2016 – 01/07/2016 ] <https://www.cardiff.ac.uk/>

I studied six months abroad during the Master Degree as part of the Erasmus programme, focusing on applied mathematics and following courses on theoretical and applied partial differential equations, image processing, combinatorics and number theory.

### **Bachelor Degree in Mathematics**

**Università degli Studi di Bologna** [ 09/2010 – 12/2014 ] <https://www.unibo.it/it>

**Final grade** : 100/110

**Thesis:** An elementary proof of the Prime Number Theorem

My final dissertation presented an elementary (not using complex functions) proof of the Prime Number Theorem, dealing with the asymptotic distribution of prime numbers within the integers.

## Python Programmer

**Datacamp** [ 10/2020 – 01/2021 ] <https://www.datacamp.com/>

I completed the Python programmer track, on Datacamp. The track is formed by 16 courses, dealing with how to manipulate data (date and time, text and web data), writing efficient Python code, and using APIs and Python libraries, such as Pandas, NumPy, pytest, and pycodestyle. I also completed several single courses on Artificial Intelligence and Deep Learning, specifically for Neural Networks and Keras Library.

## LANGUAGE SKILLS

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Mother tongue(s): **Italian**

Other language(s):

English			French		
LISTENING C1	READING C1	WRITING C1	LISTENING B1	READING B2	WRITING B1
SPOKEN PRODUCTION C1		SPOKEN INTERACTION C1	SPOKEN PRODUCTION B1		SPOKEN INTERACTION B1

## DIGITAL SKILLS

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- Python (numpy, pandas, sklearn, TensorFlow, Keras)
- MATLAB
- LaTeX
- CMS Wordpress, Wix
- C (fundamentals)
- MongoDB (fundamentals)
- SQL (fundamentals)
- Microsoft Office
- Linux (Ubuntu)

## SCIENTIFIC PUBLICATIONS

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**Davide Mauro Ferrario, Svetlana Boudko, Habtamu Abie, Mirna Boscolo, 2020. Predictive Analytics Service for Security of Blockchain and Peer-to-Peer Payment Solutions.** Kim H., Kim K.J., Park S. (eds) *Information Science and Applications*. Lecture Notes in Electrical Engineering, vol 739. Springer. [https://doi.org/10.1007/978-981-33-6385-4\\_7](https://doi.org/10.1007/978-981-33-6385-4_7)

**Davide Mauro Ferrario, Habtamu Abie, Aleksandar Jovanovic, Ernesto Troiano, John K. Soldatos, Fabrizio di Peppo, Ilias Gkotsis, Evangelos Markakis, 2021. Consolidated Proceedings of the first ECSCI Workshop on Critical Infrastructure Protection,** Steinbeis Edition, ISBN 978-3-95663-087-3. <https://bit.ly/3BLYkAP>

## CONFERENCES AND SEMINARS

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**Davide Mauro Ferrario, Ilesh Dattani, Alberto Miranda. Dissemination, Communication and Pre-Marketing activities**, during the intermediate review of the FINSEC project, Bruxelles, 19/12/2019.

Presentation of the Work Package 8 activities and key outcomes of the first 18 months of the project for task T8.1 “Dissemination, Communication and Pre-marketing Activities” during the intermediate review of the FINSEC project.

**Davide Mauro Ferrario. The ECSCI cluster – a collaborative ecosystem focused on the protection of critical infrastructures.** Accepted as oral presentation at Financial Services: Digital Transformation and the Cyber Imperative conference (22-23/04/2021)

<https://www.eventbrite.co.uk/e/financial-services-digital-transformation-and-the-cyber-imperativetickets-148323287947>

During the presentation I outlined the ECSCI cluster objective, success stories and plans and shortly introduced the 20 projects of the cluster and their sectors.

**Davide Mauro Ferrario, et al. WP3 - Data Collection and Analytics for Predictive Security**, during the final review of the FINSEC project, Online event, 09/06/2021.

I presented Z&P activities in Work Package 3, such as the development of the Multi-Layer Perceptron for the Peer-to-Peer Payment use cases.

**Davide Mauro Ferrario, Ilesh Dattani, Anne-Elisabeth Lenel, Lydia Montandon, Maurizio Megliola. Dissemination, Exploitation and Commercialisation**, during the final review of the FINSEC project, Online event, 09/06/2021.

I presented Work Package 8 activities and final outcomes and analysed task T8.1 “Dissemination, Communication and Pre-marketing Activities” results to the EC reviewers during the final review of the FINSEC project.

## ADDITIONAL INFORMATION – WORKSHOP ORGANIZATION

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**Davide Mauro Ferrario, Habtamu Abie, Ernesto Troiano. Organisation and chairing of the 1<sup>st</sup> ECSCI Workshop on Critical infrastructure protection**, held online on 24-25/06/2020.

<https://www.finsec-project.eu/ecsci-virtual-workshop>

As part of FINSEC project dissemination activities I’ve organised the 1<sup>st</sup> ECSCI cluster (European Cluster for Securing Critical Infrastructures) workshop, introducing speakers from ECSO, ENISA, the EU commission and the 11 projects of the cluster. The presentations are available at: <https://www.finsec-project.eu/ecsci-presentations>

## TECHNICAL REPORTS

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**Davide Mauro Ferrario** (Zanasi & Partners) et al. “D2.3 Modelling and Specifications for Integrated, Collaborative and Predictive Security”, 31/01/201. Contribution to the technical description of the FINSEC Reference Architecture.

**Davide Mauro Ferrario** (Zanasi & Partners) et al. “D3.4 Predictive Security Infrastructure I”, 28/02/2019 and successive updates (D3.5 on 27/05/2020 and D3.6 on 26/02/2021)

Contribution to the description of the AI algorithms (Neural networks) implemented within the FINSEC project.

**Davide Mauro Ferrario** (Zanasi & Partners) et al. “D8.1 Dissemination, Communication and Pre-marketing activities I”, 30/04/2019 and successive updates (D8.2 on 31/05/2020 and D8.3 on 30/04/2021)

Reporting and analysis of the dissemination, communication and pre-marketing strategies and activities carried out respectively in the first, second and third year of the project.

**Davide Mauro Ferrario** (Zanasi & Partners) et al. “Peer to Peer Payment Pilot III”, 31/03/2021

Technical description of AI and graph algorithms developed by Z&P for the SIA use case on the Peer-to-Peer Payment pilot.

Last update: October 2021