PERSONAL INFORMATION

Liliana Martirano

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- www.linkedin.com/in/liliana-martirano

Gender Female | Date of birth 28 February 1995 | Nationality Italian

WORK EXPERIENCE

Oct 2021 – Ongoing — ## Contract professor

University of Calabria, DIMES Department
Via Pietro Bucci, 87036, Rende (Italy)

– A.Y. 2023/2024
  • Teaching assistant for the course "Fondamenti di Informatica II – corso B" of the B.D. in computer engineering at the DIMES department (Java programming language).
  • Teaching assistant for the course "Fondamenti di Informatica I – corso B" of the B.D. in computer engineering at the DIMES department (Python programming language).

– A.Y. 2022/2023
  • Teaching assistant for the course "Fondamenti di Informatica II – corso B" of the B.D. in computer engineering at the DIMES department (Java programming language).
  • Teaching assistant for the course "Fondamenti di Informatica I – corso B" of the B.D. in computer engineering at the DIMES department (Python programming language).

– A.Y. 2021/2022
  • Teaching assistant for the course "Fondamenti di Informatica II – corso B" of the B.D. in computer engineering at the DIMES department (Java programming language).
  • Teaching assistant for the course "Fondamenti di Informatica I – corso B" of the B.D. in computer engineering at the DIMES department (Python programming language).

Mar 2021 – May 2024 — ## PhD in ICT – Information and Communication Technologies

University of Calabria, DIMES Department
Via Pietro Bucci, 87036, Rende (Italy)

Subject of the research fellowship: "Interpretable AI: Deep Learning for Knowledge Graphs". Deep graph representation learning and graph mining for complex network systems, and applications in multiple real-world datasets. Study, definition, implementation and experimentation of novel methods for knowledge discovery and modeling from feature-rich networks via graph neural networks (GNNs) and other deep architectures.
Main research topics she is/was involved in:

– Learning node representations via a GNN-based contrastive learning framework for networks being simultaneously heterogeneous, attributed and multilayer.
– Learning node representations via a GNN-based continual learning framework for networks being simultaneously heterogeneous, attributed and dynamic.
– Unveiling the main patterns, the key actors and their relationships in complex social network systems via a combination of graph mining and text mining techniques.

Oct 2020 – Ongoing — ## Application Architect and Application Developer

Epsilon Italia srl
79, Viale della concordia, 87040 Mendicino (Italy)

PMI active since 1996 in Geomatics, Research and experimental development on natural sciences and engineering.

Activities related to study and application of innovative technologies in European and National projects.

Main relevant projects she is/was involved in:

– "USAGE – Urban Data Space for Green Deal" (Horizon Europe). Support activities for the design and development of a Web application providing city-level environmental and climate data.
– "FAIRiCUBE -– F.A.I.R. Information Cubes" (Horizon Europe). Support activities for the design and development of a crosscutting platform for Earth Observation data ingestion, provision, analysis, processing, and dissemination.
– "CORDA – Copernicus Reference Data Access node" (Framework Contract with Environmental European Agency). Support activities within the Content Management Work Package for the discovery and fit-for-purpose analysis of datasets candidate for ingestion in the Multi-Country databases (AU, HY, BU and LU INSPIRE themes).
– "GO-PEG – Generation of cross-border PanEuropean Geospatial Datasets and Services". Support activities for the design and execution of the "geoCOVID Watch" use case. Use of APIs-based technologies.
– "Implementation, development and sharing of surface and subsurface geology data services" for Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA). Responsible for an outline project for a 3D web viewer with query and analysis functions.

Oct 2020 – Jul 2022

IT Consultant

NaturextraLab srl
79, Viale della Concordia, 87040 Mendicino (Italy)

Innovative start-up active in Computer programming, consultancy and related activities, Research and experimental development on biotechnology.

Knowledge extraction from structured and unstructured text. Responsible for the design and the development of a relational database of medicinal plants and of the related web application.

Dec 2019 – Dec 2022

CTO

FamAgri
Viale Matera, 75025, Policoro (Italy)

Newly formed e-commerce company active in the agri-food sector.

Business, operational and functional structuring. Java Enterprise platform development for supply chain and marketplace management.

Apr 2019 – Jun 2019

IT Consultant

Epsilon Italia srl
79, Viale della concordia, 87040 Mendicino (Italy)

Research activity on the use of OpenDatacube technologies for processing Copernicus Sentinel-3 satellite data carried out within the TEMAR project. Study of biochemical and physical parameters from satellite images for their correlation with bathing water pollution on a local scale.

Jan 2017 – May 2017

Stager

Epsilon Italia srl
79, Viale della concordia, 87040 Mendicino (Italy)

Identification of the requirements for a secure IT environment, analysis of the main criticalities and identification of the related countermeasures according to the potential risk and impact on the developed systems (web services).

EDUCATION AND TRAINING

Aug 2023 – Jan 2024

Industrial secondment as part of the PhD program in ICT

UniCredit Services S.C.p.A.
101, Via Molfetta, 00171, Roma (Italy)

Development of machine learning methods and applications for analyzing and extracting knowledge from graph-structured data, including analysis of users' behaviour and agreement on social networks with thematically focused content.

Oct 2022 – Mar 2023   Period abroad as part of the PhD program in ICT

INRAE – National Research Institute for Agriculture, Food and Environment
500, Rue Jean François Breton, 34090 Montpellier (France)

Development of machine/deep learning and data science techniques to support and improve strategic policies related to agriculture and food management, as well as adhering to the requirements of environmental sustainability.

2022   English Course for Academic Skills: B2+

University of Calabria, Centro Linguistico di Ateneo
Via Pietro Bucci, 87036, Rende (Italy)

Mar 2021 – May 2024   PhD in Information and Communication Technologies: Excellent cum laude

University of Calabria, DIMES Department
Via Pietro Bucci, 87036, Rende (Italy)

Subject of the thesis: "Deep Graph Representation Learning and Graph Mining for Feature-rich Networks".
Doctorate courses she attended under the PhD program:

– Correlation Clustering: from classic to Reinforcement Learning-based theoretical frameworks, with applications to fairness and diversity related problems.
– Active Learning.
– Advanced Deep Learning Models.
– Deep Learning and Statistical Learning.
– Data Stream Mining.
– Modelling and mining multilayer networks.
– Next Generation IoT Interoperability.
– Augmentation in Artificial Intelligence.

Oct 2017 – Sep 2020   Master's degree in Computer engineering: 103/110

University of Calabria, DIMES Department
Via Pietro Bucci, 87036, Rende (Italy)

Subject of the thesis: "Mobility analysis of geo-referenced post streams using Apache Storm".
Main individual or group project activities she carried out during the university period:

– Analysis of a social network and study of statistical properties, community detection and link prediction.
– Spatio-temporal analysis of Copernicus data based on principal components with Empirical Orthogonal Functions and Tensor Decomposition: use of data mining techniques for the study of biochemical and physical parameters from satellite imagery.
– Sentiment analysis and multi-label classification of film reviews using neural networks.
– Design and development of an artificial intelligence for solving a chess game by applying game theory and machine learning logics.
– JavaEE-based web platform development for service management and basic operations execution.
– Development of Android app for service management and basic operations executions (NoSQL DB Firebase).
– Analysis and simulation of client-server model using a real-time approach.
– Design and development of multi-agent software for solving elementary problems in game theory.
– Implementation of a complex algorithm and improvement of performance using optimisation techniques based on hardware organisation.
– OLAP analysis and querying with Pentaho
– Requirements analysis, project and business plan writing for an information system.
– Participation in the Cyber Security Challenge preparation course.

2017   Specialization course in "GIS - Geographic Information Systems"

Epsilon Italia srl
79, Viale della concordia, 87040 Mendicino (Italy)

Concepts of mapping and reference systems. Management of raster and vector data (CAD, shapefile). Analysis of geographical data. Use of Geomedia Professional software

2018 — B2 First: 170/179

Cambridge Assessment English
Certificate number: 0060054460

Oct 2013 – May 2017 — Bachelor's degree in Computer engineering: 94/110

University of Calabria, DIMES Department
Via Pietro Bucci, 87036, Rende (Italy)

Subject of the thesis: "Security management in a Windows server environment: the case of a web services company".
Main individual or group project activities she carried out during the university period:

– Implementation and simulation of ant routing algorithms for a robot system exploring a finite space with information exchange.
– Design and development of a strategic game, with logic design according to design patterns and independent graphic interface development.
– Design and development of a PC video game with 2D graphical user interface according to the object oriented approach.

Sep 2008– Jul 2013 — Diploma of Scientific Maturity – High School: 98/100

Liceo Scientifico "E. Fermi" con indirizzo P.N.I
30, Via Molinella, 87100 Cosenza (Italy)

Main activities in which she participated and gained awards in the school term:

– Participation in "Certamen plinianum" and achievement of 4th place in 2012. Contrastive translation and related analysis, contextualization and comparison questions.
– Team participation in "La tua idea di impresa", business game for business project creation aimed at schools. National winners of the 2011-2012 edition.
– Participation and achievement of regional results in the Olympiads of Philosophy, Physics and Chemistry and at the Mathematical Games of the Bocconi University.

2012 — DELF B1: 86/100

Ministère de l'éducation nationale
Certificate number: 039098-201202S-1574218.

Certificate of participation in the national selection of the best "Delfistes" 2011/2012.

PERSONAL SKILLS

Mother tongue   Italian

Other languages

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
English C1	C1	C1	C1	C1
B2 First				
French C2	C2	C2	C2	C2
DELF B1				

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user
Common European Framework of Reference for Languages

| Communication skills | – Good ability to convey and share ideas and information clearly and concisely, achieved through school, university and work team projects, participation in team sports championships, activism in a student association and student representation at the University of Calabria as student representative in the department (from 2016 to 2020), vice president of the student council (from 2019 to 2020) and representative of doctoral students in the department (from 2023 to 2024). |

– Good ability to convey and share ideas and information clearly and concisely, achieved through school, university and work team projects, participation in team sports championships, activism in a student association and student representation at the University of Calabria as student representative in the department (from 2016 to 2020), vice president of the student council (from 2019 to 2020) and representative of doctoral students in the department (from 2023 to 2024).
– Experience as peer reviewer for international journals and conferences during the doctoral program .
– Obtained certificate of "extensive skills and knowledge of teamwork, foreign languages, intercultural communication and EU policy" following participation in the XXVIII National Selection of the European Youth Parliament in 2012 as a member of the FEMM Committee for Women's Rights and Gender Equality.

Organisational / managerial skills

– Strategic planning and project management: Ability to manage time and priorities in fast-paced work environments, ensuring compliance with deadlines. Competence in developing and implementing long-term business strategies, setting objectives and monitoring progress. Experience in planning and overseeing complex projects using agile methodologies and project management software. Support provided to Epsilon Italia srl in organizing meetings and events related to international contracts and projects.
– Problem solving: Excellent skills in solving complex problems and making informed decisions in critical situations. Adaptive and autonomous working skills.
– Leadership: Ability to lead multidisciplinary teams, motivate team members and effectively delegate tasks, improved in the role of vice president of the student council (from 2019 to 2020), president of a student association at the University of Calabria (from 2021 to 2024) and CTO of the start-up FamAgri (from 2019 to 2022).
– Academic tutoring and thesis supervision: Experience as an academic tutor for both internal university internships related to research projects and external company internships related to Horizon Europe projects during the PhD program. Served as advisor and co-advisor for bachelor's theses in Computer Engineering in the last year.

Driving licence B

ADDITIONAL INFORMATION

Publications

– Martirano, L., Ienco, D., Interdonato, R., Tagarelli, A.: DyHANE: Dynamic Heterogeneous Attributed Network Embedding through experience node replay. Applied Network Science, Springer. Under Review, 2024.
– Martirano, L., La Cava, L., Gullo, F., Tagarelli, A.: Agreement and disagreement on climate crisis: insights from Twitter during the Conferences of the Parties. In Proc. of the International Conference on Complex Networks and their Applications, CNA - Book of Abstracts, Menton Riviera (FR), November 28 – 3, 2023.
– Martirano, L., La Cava, L., Tagarelli, A.: Evolution of the social debate on climate crisis: insights from Twitter during the Conferences of the Parties. In Proc. of the International Conference on Information and Communication Technologies for Disaster Management - ICT-DM, Cosenza (IT), September 13 - 15, 2023.
– Martirano, L., Interdonato, R., Ienco, D., Tagarelli, A.: DyHANE: Dynamic Heterogeneous Attributed Network Embedding. In Proc. of the French Regional Conference on Complex Systems - FRCCS - Book of Abstracts, Le Havre (FR), May 31 – June 2, 2023.
– Martirano, L., Zangari, L., Tagarelli, A.: Co-MLHAN: contrastive learning for multilayer heterogeneous attributed networks. Applied Network Science, Springer, 2022.
– Martirano, G., Morrone, S., Vinci, F., Bilotti, L., Martirano, L.: Data interoperability in action. In Proc. of the Conferenza Nazionale di Geomatica e Informazione Geografica - ASITA, Genova (IT), June 20 – 24, 2022.
– Martirano, L., Tagarelli, A.: Graph Node Embedding with Co-contrastive Learning for Heterogeneous Attributed Multilayer Network. In Proc. of the International Conference of Complex Networks and their Applications, CNA - Book of Abstracts, Madrid (ES), November 30 – December 2, 2021.

Dissemination and public engagement activities

- Poster presentation at 12th International Conference on Complex Networks and their Applications (CNA), Menton Riviera (France), Nov 27 – 30, 2023.
- Oral presentation at 8th International Conference on Information and Communication Technologies for Disaster Management(ICT-DM) Sep 13 – 15, 2023.
- Attendance at 9th International Conference of Computational Social Science (IC2S2), Copenhagen (Denmark), Jul 17 – 20, 2023.
- Poster presentation at 3rd French Regional Conference on Complex Systems (FRCCS), Le Havre (France), May 31 – Jun 2, 2023.
- Attendance at 12th StatLearn Workshop, Montpellier (France), Apr 5 – 7, 2023.
- Attendance at 11th International Conference on Complex Networks and their Applications (CNA), Palermo (Italy), Nov 7 – 10, 2022.
- Oral presentation at 10th International Conference on Complex Networks and their Applications (CNA), Madrid (Spain), Nov 30 – Dec 2, 2021.

The undersigned authorises the processing of personal data in accordance with Regulation (EU) 2016/679 and Legislative Decree 196/2003