



Europass Curriculum Vitae

Personal information

Name	Simeoni Christian
E-mail	Christian.simeoni@cmcc.it 870124@stud.unive.it
Nationality	Italian
Date of birth	13/05/1994
Gender	Male

Work experience

Dates	09/2020 →
Occupation or position held	PhD student
Name and address of employer	Ca' Foscari University of Venice
Type of business or sector	Research activities, climate change vulnerability and risk assessment.
Dates	04/2020 → 08/2020
Occupation or position held	Research fellow
Name and address of employer	Ca' Foscari University of Venice
Type of business or sector	Research activities, climate change vulnerability and risk assessment.
Dates	03/2020 → 04/2020
Occupation or position held	Junior researcher
Main activities and responsibilities	The research activities are carried out within the following projects: SAVEMEDCOASTS-2 project (2019 →) (www.savemedcoasts.eu). This project aims to respond to the need for prevention from natural disasters in Mediterranean coastal caused by the combined impact of sea level rise (SLR) and land subsidence (LS) in the major river deltas, lagoons and reclamation areas previously identified in the SAVEMEDCOASTS project, being the coastal zones most exposed to flooding of the Mediterranean region

TRITON project (2018 →) (www.interregtriton.eu). Interreg V- A Greece-Italy Programme 2014 2020 is a Cross-border Cooperation Programme between Greece and Italy co-funded by the European Union that aims to help public institutions and local stakeholders to develop cross-border projects and pilot actions and to create new policy, products and services, with the final goal to improve the citizens' quality of life.
 Contribution to the draft of technical reports and deliverables summarizing key project outcomes, and providing criteria and guideline for coastal erosion risk and vulnerability assessment and management.

Name and address of employer CMCC @Ca' Foscari Euro-Mediterranean Center on Climate Change | Raas Division
 Type of business or sector Research activities, climate change vulnerability and risk assessment.

Dates 07/2016 → 09/2016
 Occupation or position held Internship in the technical office Corazzin Ennio.

Dates 04/2014 → 06/2014
 Occupation or position held Caaf's fiscal operator

Education and training

Dates 09/2017 → 03/2020
 Title of qualification awarded Master's degree in Environmental Science (110/110 cum Laude)
 Principal subjects/occupational skills covered This Thesis explored the potential of Machine Learning-based (ML) models for the assessment and modelling of Water Quality variations by: (i) reviewing the state of the art of ML methods already applied by the scientific community to this research field and (ii) designing a ML-based approach model for the analysis of Chlorophyll -a variations, as a proxy indicator of eutrophication processes occurring in the Venice Lagoon case study. The designed Multi-layer Perceptron model represents the first attempt to apply an Artificial Neural Network-based model to simulate WQ variations in the Venice lagoon, providing a first exploration and testing of the high performance of these methodologies in processing big datasets and modelling environmental phenomena in complex systems.
 Thesis: "*A Machine Learning-based approach for the assessment of water quality variation in the Venice Lagoon*"
 Supervisor: Prof. Andrea Critto
 Name and type of organisation providing education and training University Ca' Foscari of Venice, Department of Environmental Sciences, Informatics and Statistics Dorsoduro 2137, 30121, Venice

Dates 10/2018 → 02/2020
 Title of qualification awarded Student trainee (as part of the learning activities included in the MSc study plan)
 Principal subjects/occupational skills covered The research activities are carried out within the following projects:
Venezia 2021 (www.corila.it/it/Venezia2021) project, in collaboration with the Foundation Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC, www.cmcc.it).
DG CLIMA project (2019 →): Review of the state-of-the-art machine learning based methods, supporting multi-risk appraisal across different sectors and management purposes.
 Name and type of organisation providing education and training CMCC @Ca' Foscari Euro-Mediterranean Center on Climate Change | Ca' Foscari University of Venice

Dates 06/2019
 Title of qualification awarded Final certificate
 Name and type of organisation providing education and training University Ca' Foscari of Venice
 Dorsoduro 2137, 30121, Venice.
 Principal subjects/occupational skills covered Safety and health course in teaching and research activities: (i) online course of general training (4 hours); (ii) presence course with specific training (12 hours)

Dates 09/2018 → 02/2019
 Title of qualification awarded Erasmus
 Name and type of organization Universeit of Antwerpen, Antwerp (Belgium)

Dates 09/2014 → 07/2017
 Title of qualification awarded Bachelor's degree in Land Rehabilitation and Environmental Protection (104/110)
 Name ad type of organization University of Padua - Department of Agriculture, forestry and fishery
 Principal subjects This Thesis has been carried out in order to evaluate possible future climatic variations in the High River Basin of the Adige River. Specifically, climatic trends have been developed up to 2100 with the aim of assessing possible increases in temperature and/or variations in the precipitation regime. The proposed climate scenarios are related to a future world with a fast-growing economy, with the world population declining after peaking in mid-century and considered the rapid introduction of new and more efficient technologies.
 Thesis: *Assessment of changes in rainfall and temperature regime in the upper Adige river basin in relation to climate change scenarios.*
 Supervisor: Prof. Borga Marco

Personal skills and competences

Mother tongue **ITALIAN**

Self-assessment <i>European level (*)</i>	Understanding		Speaking		Writing
	Listening	Reading	Spoken interaction	Spoken production	
Language	B2	B2	B2	B2	B2

(*) [Common European Framework of Reference for Languages](#)

Social skills and competences Good ability to work in synergy with colleague students on different projects requiring flexibility and adaptability, as well as to develop European project proposal

Organisational skills and competences Good time management skills useful to keep tasks, deliverables, and projects under control so that business operations can flow smoothly, as well as to adapt to new problems and readjust as needed to complete an assignment.
 Good team spirit: open to collaborate with multidisciplinary group of experts, recognize and appreciate contribution by others.
 Good organization skills allowing to prioritize different tasks and concentrate effectively on my goal.

Job-related skills

- High knowledge of environmental processes, with a thorough scientific background in climate science.
- Basic knowledge of computer language specific terms and algorithms/models used in the Machine Learning universe.
- Good knowledge of Artificial Neural Networks architectures and related methodologies designed for processing big datasets and modelling complex environmental phenomena, supporting the analysis of the water quality status and to model its future variations under potential climate change and management scenarios.

Technical skills and competences	<p>Good command of GIS and cartography tools: QGIS, ESRI ArcGis (including DSAS tool).</p> <p>Basic knowledge of R software (free software environment for statistical computing and graphics). Expert of the Bibliometrix R Package</p> <p>Basic knowledge of Decision support System: DESYCO (DEcision support SYstem for COastal climate change impact assessment).</p> <p>Good command of Microsoft Office™ tools: Word™, Excel™ and PowerPoint™.</p> <p>Good command of AutoCAD</p> <p>Basic command of Phyton programming language (libraries including Numpy, TensorFlow and PyTorch).</p>
Artistic skills and competences	Good ability to design thematic maps and layouts
Driving licence	Category B2
Additional information	<p>Collaborations</p> <p>Collaboration to the drafting of the H2020 MSCA-RISE EXPERIENCE (EXploring new PartnErships for maRInE and coastal ecosystems management in small islands under a chaNging ClimatE) project proposal. The overarching objective of the EXPERIENCE project is to form an international and intersectoral network of organisations, blending complementary expertise in specific disciplines of natural, social and economic sciences, to drive effective and integrated marine and coastal ecosystems management in small islands under a changing climate.</p> <p>Tutoring Activities</p> <p>Assistant instructor within the training carried out in the frame of the MSc course in 'Environmental impacts related to climate change' Program in Environmental Sciences, University Ca' Foscari of Venice, a.y. 2018/2019.</p> <p>Assistant lecturer within the Hackathon Training organized at Ca'Foscari (12/2020) and aimed at preparing participants for the Vicenza's Copernicus Hackathon, by means of presenting the potential of ML for climate change risk assessment and adaptation planning in terms of implemented models across applications and case studies.</p> <p>- Participation, with a multidisciplinary team composed by researchers from the Ca' Foscari University of Venice and the CMCC, to the Vicenza's Copernicus Hackathon competition (Fourth position with the Project: SEA-NET: Smart Environmental Assessment. Green Intelligence for Nature Based Solutions). Specifically, the project focus on the identification of coastal and marine areas ecosystems requiring tailored measures to adapt to climate change scenarios and selects the most suitable Nature-Based Solutions (including the transplanted seagrasses meadows) using Copernicus Sentinel-2 data and capitalizing additional data from other European projects.</p>
Certifications	<ul style="list-style-type: none"> ▪ English language certification: level B2 (certified by University Ca' Foscari of Venice). ▪ Safety and health course in teaching and research activities: (i) online course of general training (4 hours); (ii) presence course with specific training (12 hours). Certification assigned by University Ca' Foscari of Venice (06/2019). ▪ Food safety course valid until September 2022. ▪ Sustainable development course on: education for the management of natural and cultural heritage (Unesco)_ speaker dr. Giorgio Andrian
Annexes	Annex 1: List of publications

ANNEX 1

LIST OF PUBLICATIONS

Papers in preparation:

A Machine Learning-based approach for the assessment of water quality variation in the Venice Lagoon.

Christian Simeoni, Elisa Furlan, Alessandro Torcinovic, Francesco Pelosin, Sebastiano Vascon, Andrea Critto, Marcello Pelillo and Antonio Marcomini. *In preparation.*

Water quality analysis and modelling using Machine Learning techniques: a scientometric and systematic literature review.

Christian Simeoni, Elisa Furlan, Andrea Critto and Antonio Marcomini. *In preparation.*

Exploring Machine learning potential for climate change risk assessment and adaptation planning

Federica Zennaro, Elisa Furlan, **Christian Simeoni**, Silvia Torresan, Andrea Critto and Antonio Marcomini. *In preparation.*

Proceedings of National and International conferences:

Exploring Machine learning potential for the assessment of eutrophication processes in the Venice Lagoon

Christian Simeoni, Elisa Furlan, Alessandro Torcinovic, Francesco Pelosin, Sebastiano Vascon, Andrea Critto, Marcello Pelillo and Antonio Marcomini. Submitted as poster presentation to the **GCC 2020**: 14th Annual Graduate Climate Conference, University of Washington (US) October 30 - November 1, 2020.

Climate change exposure and vulnerability assessment in the Metropolitan City of Venice.

Christian Simeoni, Elisa Furlan, Silvia Torresan, Federica Zennaro, Andrea Critto, Anna Sperotto and Antonio Marcomini. Submitted as poster presentation to the **EUROLAG 9**: Future vision and knowledge needs for coastal transitional environments, Venice (Italy) 20-24 January 2020.

Exploring Machine learning potential for climate change risk assessment and adaptation planning.

Federica Zennaro, Elisa Furlan, **Christian Simeoni**, Silvia Torresan, Andrea Critto and Antonio Marcomini. Submitted as poster presentation to the **INQUIMUS 2019**: "Data, methods and tools for dynamic risk assessments: What are requirements, and how to tackle persisting challenges?" 26th – 28th November 2019 at UN Campus, Bonn (Germany).

Exploring Machine Learning potential for climate change risk assessment and adaptation planning

Zennaro F., Furlan E., Torresan S., **Simeoni C.**, Critto A., Marcomini A. Submitted as oral presentation to the **CLIMRISK 2019** – 7th **SISC** Annual Conference, Trento (Italy) 23-25th October 2019.

Working documents:

Deliverable 3.5 'Development of the framework and tool for final users with training'. Interreg V-A Greece-Italy TRITON project.

Abstract: Coastal environments are featured by high variability, where geomorphological, biological and physical variables show significant spatial and temporal variations induced by both natural and anthropogenic forcing. In particular, sandy coasts are the most vulnerable as they exhibit large responses to low-frequency but high impact/extreme events, such as storm surge flooding events. Against the complex interactions occurring at the land-sea interface, coastal managers and policy makers are increasingly calling for new integrated approaches and tools able to support a multi-scenario evaluation of environmental risks arising from natural and human-induced stressors acting in concert on the same coastal targets (e.g. urban areas, coastal communities and ecosystems). The Integrated Coastal Zone Management (ICZM) approach represents a valuable tool to resolve these issues, providing a structured framework and principles to reduce impacts due to short and long-term pressures, and provide support to sustainable and integrated shoreline management. In the frame of the task 3.5 'Development of the framework and tool for final users with training', this report provides an overview of the main tools and methods providing support to policy and decision makers in the implementation of European recommendations and directives for coastal zone risk assessment and management. A set of 44 tools were selected and sorted in indicator and index-

based, GIS-based DSS, remote sensing-based methods exploiting potential posed by satellite imagery and Bayesian Network approaches. These methods, with a different level of complexity and detail in the data processing and final outcomes, allow identifying areas and receptors at higher coastal erosion risk, and to simulate future climate and management scenarios, thus allowing to explore the effects induced by multiple measures and climate conditions, with the final aim of supporting the development and implementation of more robust and adaptive coastal erosion risk-based management strategies. A selection of these tools will be applied in the frame of the TRITON pilot cases, in order to evaluate coastal erosion processes and provide the scientific means for cross border operational plan for ICMZ implementation across Greece and Italy.

Submitted.

Last update: January 2021