



Filippo Tonion

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WORK EXPERIENCE

CEO and founder

TREE s.a.s [09/05/2024 – Current]

City: Treviso | Country: Italy

TREE - CEO and founder

1. Development of new algorithms for satellite data analysis, based on AI
2. Monitoring Seaweeds along the entire Irish west coast using Sentinel-2 data and an innovative AI based model
3. Geomorphological monitoring of River Isonzo using satellite data (including Sentinel-2) and an innovative AI based model
4. Satellite derived bathymetry on an area in Emilia Romagna
5. Environmental Impact Assessment Studies
6. Statistical, Geospatial Analysis and cartography production
7. Life Cycle Analysis, analysis of sustainability, analysis of Carbon Footprint

Project Manager

IMQ eAmbiente srl [01/09/2022 – 05/05/2024]

City: Venezia | Country: Italy

As an *Environmental Project Manager* I am responsible for multiple activities management, from stakeholders dealing to technical aspects; some of the works which I am involved are for example:

1. Permitting activities (Environmental Impact Assessment, Due Diligence, Authorization practices,...etc.)
2. Monitoring plans
3. Remote sensing data analysis and statistical analysis
4. Geographic Information Systems projects and cartography production
5. Sustainability analysis (Life Cycle Assessment and Carbon Footprint)
6. Projects of green infrastructures

Currently I have the opportunity to manage and to develop works that deal with multiple themes of environmental consultancy, keeping a wide view on the most current challenges.

Environmental Consultant

T.E.R.R.A. S.r.l. [01/09/2017 – 31/08/2022]

City: San Donà di Piave | Country: Italy

Firstly as an *Environmental Consultant* and then as a *Project Manager* I had the possibility to work on a wide range of environmental themes, being responsible for Research and Development of the society. During the years my working experience was enriched with different kinds of activities, like for example:

1. Development of new algorithms for satellite data analysis, based on AI
2. Monitoring Seaweeds along the entire Irish west coast using Sentinel-2 data and an innovative AI based model

3. Geomorphological monitoring of River Isonzo using satellite data (including Sentinel-2) and an innovative AI based model
4. Satellite derived bathymetry on an area in Emilia Romagna
5. Environmental Impact Assessment Studies
6. Statistical, Geospatial Analysis and cartography production
7. Life Cycle Analysis, analysis of sustainability, analysis of Carbon Footprint

The professional activity conducted allowed me to develop the main framework of my knowledge and skills. I had the opportunity to innovate and to follow my passion (EO data analysis) with autonomy and independence.

ME IN BRIEF

Capable, skilled, determined, positive, empathic and innovative, a persistent dreamer.

EDUCATION AND TRAINING

Doctor of Philosophy (Industrial Ph.D Program)

University of Padua – L.E.R.H. School [01/09/2018 – 27/09/2022]

Address: Viale dell'Università, 35020 Legnaro (Italy) | **Website:** <https://www.tesaf.unipd.it/en/research/doctoral-degrees-phd-lerh-program/teachers-and-students> | **Level in EQF:** EQF level 8 | **NQF Level:** Doctor of Philosophy | **Thesis:** Geomatic Technologies for Monitoring Earth Surface Dynamics and Related Impacts

The industrial Ph.D. program aimed to investigate the potentiality of Artificial Intelligence based algorithms as a precise and scalable tool for supporting environmental monitoring. The work of research was focused on different environmental themes (like satellite derived bathymetry, coastal vegetation monitoring, study of pollution and study of river morphology); the research activity was mainly connected with the following points:

- Remote Sensing data analysis
- Study and Application Machine Learning Techniques
- Study and Application of Deep Learning Techniques
- Algorithm Development Activity

The results were particularly good and were supported by different works developed both at national and international scale.

Professional Course “Machine Learning with Graphs” with Python

Stanford University [01/01/2022 – 15/04/2022]

Country: United States | **Website:** <https://online.stanford.edu/> | **Field(s) of study:** Artificial Intelligence

The course included different aspects of network analysis, starting from traditional techniques to the most advanced Graph Convolutional Networks techniques.

OpenLCA Professional Course - Certification of openLCA Professional, Advanced

GreenDelta – Greenstep [26/01/2022 – 27/01/2022]

Address: piazza Medici, 16, 14100 Asti (Italy) | **Website:** <https://greenstep.it/> | **Field(s) of study:** Environmental Sustainability

The course was an intensive course on advanced aspects of OpenLCA software for professional analysis of sustainability with LCA methodology.

R Programming

Johns Hopkins University [12/10/2021 – 15/01/2022]

Country: United States | **Website:** <https://www.coursera.org/jhu> | **Field(s) of study:** R programming

The course was attended to refine some aspects of R programming.

Close Range Sensing Techniques in Alpine Terrain – Summer School

University of innsbruck [17/06/2019 – 22/06/2019]

Country: Austria | Website: <https://www.uibk.ac.at/geographie/summerschool/>

Forest and Environmental Sciences Master Degree

University of Padua [01/10/2015 – 17/07/2017]

Address: Viale dell'Università , 30052 Legnaro (Italy) |

Website: <https://www.agrariamedicinaveterinaria.unipd.it/> | Field(s) of study: Forest and Environmental Sciences | Final grade: 110/110 | Level in EQF: EQF level 7 | Type of credits: ECTS | Number of credits: 120 | Thesis: Multitemporal satellite image analysis of photosynthetic fractional cover to distinguish groups of forest types

During the master degree program I had the possibility to focus my study activity on the following main themes:

- Remote Sensing.
- GIS Software use.
- Silviculture
- Botany
- Ecology

As a master's degree student I started the development of my passion for remote sensing techniques for monitoring environmental phenomena.

First Level Master

Consiglio Nazionale delle Ricerche -Istituto di Biologia e Biotecnologia Agraria (IBBA) [01/11/2015 – 15/06/2016]

Address: Via Edoardo Bassini nr. 15, 20133 Milano (Italy) | Website: <https://ibba.cnr.it/> | Field(s) of study: Environmental Sustainability and Bioenergy | Level in EQF: EQF level 7 | Thesis: Study of economic and environmental feasibility of different kinds of biogas plants.

During the first level master course I studied applied aspects of bioenergy (biomethane and anaerobic digestion) within the context of environmental sustainability and energy grids. The main fields of study were:

- Environmental Sustainability
- Bioenergy

Forest and Environmental Technologies Bachelor Degree

University of Padua [01/10/2012 – 13/07/2015]

Address: Viale dell'Università, 30052 Legnaro (Italy) | Website: <https://www.agrariamedicinaveterinaria.unipd.it/> | Field(s) of study: Forest and Environmental Technologies | Final grade: 107/110 | Level in EQF: EQF level 7 | Type of credits: ECTS | Number of credits: 180

During my Bachelor degree the main topics of study were:

- GIS Software use.
- Silviculture
- Botany
- Ecology

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s):

English

LISTENING C1 READING C2 WRITING C1

SPOKEN PRODUCTION C1 SPOKEN INTERACTION C1

DIGITAL SKILLS

Suite Office (Excel Word Ppt) / Image editing / Windows Linux OS / Blender - basics

Organizational skills

problem solving / project manager / working autonomy / continuous study / network building

Job-related skills

R-Programming / GIS Software / R Data Analysis / python programming / Remote Sensing data analysis / CAD software / Planetscope data / GitHub / Sentinel data / Landsat data / R Studio Server / Google Earth Engine(GEE) Google Earth Pro

PUBLICATIONS

[2020]

A Machine Learning Approach to Multispectral Satellite Derived Bathymetry

Tonion, F., Pirotti, F., Faina, G., & Paltrinieri, D.

[2019]

Classification of aerial laser scanning point clouds using machine learning: a comparison between random forest and Tensorflow

Pirotti, F., & Tonion, F.

[2020]

Analysis of filtering techniques for investigating landslide-induced topographic changes in the Oetz Valley (Tyrol, Austria).

Gutierrez, I., Før Gjernmunden, E., Harcourt, W. D., Kuschnerus, M., Tonion, F., & Zieher, T.

[2022]

Artificial Intelligence for a Multi-temporal Classification of Fluvial Geomorphic Units of the River Isonzo: A Comparison of Different Techniques

Tonion, F., & Pirotti, F.

[2022]

Seaweeds detection using machine learning and remote sensing: an application over the Irish west coast

Tonion, F., & Pirotti, F.

[2022]

Sentinel-5P NO2 data: cross-validation and comparison with ground measurements

Pirotti, F., & Tonion, F.

CONFERENCES AND SEMINARS

[17/11/2021 – 17/11/2021] Padua

GISday University of Padua Seaweed Monitoring Using Remote Sensing

[09/11/2021 – 09/11/2021] Gorizia

Presentation of Grevislin Interreg Results Analysis of river Isonzo for the individuation of minimum water discharge to maintain hydraulic continuity, based on satellite data

[16/07/2021 – 16/07/2021] Online

ASITA Conference 2021 Artificial Intelligence for a multi-temporal classification of fluvial geomorphic units of the river Isonzo: a comparison of different techniques

[30/06/2021 – 30/06/2021] Online

Satellite Derived Bathymetry talk Organized by The Mediterranean and Black Seas Hydrographic Commission (MBSHC) AI Based Satellite Derived Bathymetry: Toward An Innovative Approach

[20/02/2019 – 20/02/2019] Turin

GFOSS - Annual Conference on Satellite and Geospatial Analysis Satellite Derived Bathymetry using Machine Learning

AVAILABILITY

Availability and notice period

I am ready and available to start my new professional career as soon as possible. Currently my notice period is 45 calendar days.