



## curriculum vitae

PIASER ERIKA

### PERSONAL INFORMATION

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| Surname   | <b>Piaser</b> |
| Name      | <b>Erika</b>  |
| Address   |               |
| Telephone |               |
| Fax       | -             |
| E-mail    |               |
| Skype     |               |

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| Nationality |  |
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| Date of birth |  |
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### EDUCATION

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| • Date (from-to)   | 09/2017 – 04/2020   |
| • Title of qualification awarded                                 | <b>MSc degree in Environmental and Land Planning Engineering</b>  |
| • Name and type of organisation providing education and training | Politecnico di Milano (Italy)   |
| Duration of the program of study                                 | Two years   |
| • Principal subjects/occupational skills covered                 | Major in land protection and natural risks prevention: design structural and non-structural mitigation measures against natural hazards and their anthropogenic influences. Main topics are structural interventions for hydro-geological protection, soil protection and conservation, both at local and regional scale; non-structural interventions of hydro-geological and seismic bounding |
| Final mark obtained  | 106/110   |

**graduation thesis**

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|----------------|--|
| Title          | Mappatura di aree percorse dal fuoco in ambiente mediterraneo mediante un approccio fuzzy applicato ad immagini Sentinel-2   |
| Language       | Italian  |
| Supervisor     | Prof.ssa Giovanna Sona (Politecnico di Milano), Ing. Daniela Stroppiana (CNR-IREA)   |
| Thesis Summary | Sentinel-2 Multi-Spectral Instrument images have been used for mapping burned areas within the borders of the Vesuvius National park, affected by fires during summer 2017. A fuzzy algorithm have been adapted and applied to S-2 images. After the definition of fuzzy Membership Functions based on histograms of training areas, they're applied to S-2 images to find the Membership Degree, or the probability to belong to the burned class. Input membership degrees have been integrated to derived pixel-based synthetic scores of burned likelihood with Ordered Weighted Averaging operators. Different operators were tested and output score maps provided as continuous values in the [0,1] domain have been segmented to extract burned/unburned areas; the performance of thresholds and OWA operators has been evaluated by comparison with Copernicus fire damage layers from the Emergency Management Service (EMS). Error matrix, omission, commission error and Dice coefficient metrics have been analysed. Results show satisfactory accuracy achieved for the most severely affected areas while lower performance is observed for slightly damage areas. The algorithm is implemented in another burned area (Portugal) to text exportability. |

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| • Date (from-to)   | 10/2014 – 09/2017  |
| • Title of qualification awarded                                 | <b>BSc degree in Environmental and Land Planning Engineering</b> |
| • Name and type of organisation providing education and training | Politecnico di Milano (Italy)                                    |
| Duration of the program of study                                 | Three years  |
| Final mark obtained  | 103/110  |

**graduation thesis**

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|----------------|---|
| Title          | Pianificazione transfrontaliera tra Italia e Svizzera: un'ipotesi di connessione ferroviaria pedemontana  |
| Language       | Italian   |
| Supervisor     | Prof.ssa Giovanna Fossa (Politecnico di Milano)   |
| Thesis Summary | La proposta transfrontaliera prevede la messa a sistema di linee ferroviarie esistenti (tra Domodossola ed Edolo lungo l'asse Ovest-Est) e un'ipotesi di progettazione di massima della tratta mancante tra le città di Lugano e Colico. La proposta consentirebbe quindi di incrementare il flusso turistico lungo la tratta principale e nei poli della tratta ferroviaria. |

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| • Date (from-to)   | 09/2009 – 06/2014                                 |
| • Title of qualification awarded                                 | <b>High school diploma</b>                        |
| • Name and type of organisation providing education and training | Liceo scientifico Arturo Tosi, Busto Arsizio (VA) |
| Duration of the program of study                                 | Five years  |
| Final mark obtained  | 82/100  |

## TRAINING

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| • Completion Date  | 03/06/2021   |
|  | <b>Getting and Cleaning Data</b>   |
| • Name and type of organisation providing education and training | Johns Hopkins University, Maryland (provided by Coursera online)   |
| Duration of the program of study                                 | Approx. 20 hours   |
| Grade  | 97/100   |
| Summary  | The course will cover obtaining data from the web, from APIs, from databases and from colleagues in various formats. It will also cover the basics of data cleaning and how to make data “tidy”. |

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| • Completion Date  | 21/04/2021  |
|  | <b>R programming</b>  |
| • Name and type of organisation providing education and training | Johns Hopkins University, Maryland (provided by Coursera online)  |
| Duration of the program of study                                 | Approx. 57 hours  |
| Grade  | 98/100  |
| Summary  | The course covers practical issues in statistical computing which includes programming in R, reading data into R, accessing R packages, writing R functions, debugging, profiling R code, and organizing and commenting R codes |

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| • Completion Date  | 13/04/2021   |
|  | <b>The Data Scientist’s Toolbox course</b>   |
| • Name and type of organisation providing education and training | Johns Hopkins University, Maryland (provided by Coursera online)   |
| Duration of the program of study                                 | Approx. 18 hours   |
| Grade  | 100/100  |
| Summary  | The course gives an overview of the data, questions, and tools that data analysts and data scientists work with. There are two components to the course. The first is a conceptual introduction to the ideas behind turning data into actionable knowledge. The second is a practical introduction to the tools that will be used in the program like version control, markdown, git, GitHub, R, and RStudio |

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| • Date (from-to)   | 13/10/2020- 13/11/2020   |
|  | <b>MOOC: Geospatial Applications for Disaster Risk Management</b>  |
| • Name and type of organisation providing education and training | United Nations Office for Outer Space Affairs (UNOOSA) and Centre for Space Science and Technology Education for Asia and the Pacific  |
| Duration of the program of study                                 | 24 hours   |
| Topics   | Track 1 (Basic Module): the track aims at the imparting basic knowledge on disaster risk reduction, remote sensing and geospatial technologies with few assignments and targets. Track 2 (Advanced Module): more technical module that aims at developing skills in the use of Earth observation in assessing various disasters (Hydro-meteorological, Geological and Environmental disasters) |

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| • Date (from-to)   | 14/07/2020-17/07/2020   |
|  | <b>2020 IGARSS Online Summer School: Remote Sensing for Volcanoes</b>   |
| • Name and type of organisation providing education and training | University of Hawaii at Hilo for IEEE   |
| Duration of the program of study                                 | 12 hours  |
| Topics   | Thermal imaging, SAR interferometry, sUAS operations, Geospatial data analysis with a focus on volcanic eruptions in Hawaii and Italy |

## PUBLICATIONS AND ARTICLES SUBMITTED

|                     |  |
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| Author(s) and title | <i>Sali, M., Piaser, E., Boschetti, M., Brivio, P., Sona, G., Bordogna, G., Stroppiana, D.,</i> An automated burned area mapping algorithm for Sentinel 2 data based on approximate reasoning and region growing |
| Language            | English  |
| Publication place   | <b>Remote Sensing (MDPI)</b>   |
| Date of publication | Published in June 5, 2021 into the Special Issue Remote Sensing in Forest Fire Monitoring and Post-Fire Damage Analysis  |

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| Author(s) and title | <i>Piaser, E., Pinardi, M., Toth, V., Villa, P.,</i> Using Hyperspectral imaging for characterizing macrophyte diversity: spectro-functional variability within and across floating and emergent species |
| Language            | English  |
| Publication place   | <b>ASLO 2021 Aquatic Sciences Meeting (abstract)</b>   |
| Date of publication | Accepted into scientific program under session - SS82: Multiple dimensions of macrophyte diversity – scheduled for June 25 2021  |

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| Author(s) and title | <i>Piaser, E., Sona, G., Sali, M., Boschetti, M., Brivio, P. A., Bordogna, G., Stroppiana, D.,</i> Sentinel 2 data and fuzzy algorithm for mapping burned areas and fire severity in the Vesuvio National Park, Italy, EGU2020-21611, <a href="https://doi.org/10.5194/egusphere-egu2020-21611">https://doi.org/10.5194/egusphere-egu2020-21611</a> , 2020 |
| Language            | English  |
| Publication place   | <b>EGU General Assembly 2020: Sharing Geoscience Online (abstract)</b>   |
| Date of publication | Included into scientific program under Section ITS4.5/GI1.4 – New frontiers of multiscale monitoring, analysis and modelling of environmental systems (presentation made on May 8 2020)  |

## CERTIFICATIONS

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| Certifications of language knowledge | English Toeic: 765/990, 28/09/2016 |
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## WORK EXPERIENCE, STAGES, STUDIES ABROAD

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| • Date (from – to)                     | 01/08/2020 - present   |
| • Name and address of firm/university  | National Research Council, Institute for Electromagnetic Sensing of the Environment (CNR – IREA),<br>Via Bassini, 15 - 20133 Milano  |
| • Type of employment                   | <b>Graduate Research Fellow (assegno di ricerca)</b><br>Supervisor: Paolo Villa (CNR – IREA)   |
| • Main activities and responsibilities | Research activities as part of the PRIN 2017 project “macroDIVERSITY” , a multidisciplinary project aiming to merge phylogenetic signal and spectroscopy data to estimate functional diversity of macrophyte (aquatic plants) communities across scales and environmental gradients. Right now I’m in charge of setting up <i>in situ</i> platforms on macrophyte stands for hyperspectral data acquisition and processing, including drone-based hyperspectral imagery with centimetric resolution for mapping morphological and biochemical traits of macrophytes (e.g. canopy density, productivity, pigments and nutrients content). |

## PERSONAL SKILLS AND COMPETENCES

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| Mother tongue | <b>Italian</b> |
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| Other language(s) |
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|             | <b>English</b>      |
| • reading   | Independent user-B2 |
| • listening | Independent user-B2 |

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| <b>Social skills and competences</b><br><i>Living and working with other people, in multicultural environments, in positions where communication is important and situations where teamwork is essential (e.g. Culture and sports), etc.</i> | <ul style="list-style-type: none"> <li>- Team spirit</li> <li>- Good communication skills gained through my personal experience at Politecnico di Milano, working in groups with other people</li> <li>- Excellent presentation skills</li> </ul> |
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| <b>Organisational skills and competences</b><br><i>E.g. coordination and management of people, projects and budgets; at work, in voluntary work (e.g. culture and sports) and at home, etc.</i> | <ul style="list-style-type: none"> <li>- Goal setting and meeting goals</li> <li>- Working with a large amount of data</li> <li>- Excellent order and organization</li> </ul> |
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| <b>Technical skills and competences</b><br><i>With computers, specific kinds of equipment, machinery, etc.</i> | <ul style="list-style-type: none"> <li>- <b>Production and data management:</b> Microsoft Windows, Microsoft Word, Excel, PowerPoint, Adobe Acrobat, Outlook, GitHub</li> <li>- <b>Programming languages:</b> C, R, Matlab</li> <li>- <b>Image processing:</b> Lightroom</li> <li>- <b>GIS:</b> ESRI ArcGIS, QGIS, SNAP, Google Earth</li> <li>- <b>Hydraulic modelling:</b> HEC-RAS</li> </ul> |
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| <b>LICENCES</b> | Driving license B |
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