curriculum vitae

Surname	**LOTFIAN**
Name	**Maryam**
Telephone	**+41 787409690**
E-mail	maryam.lotfian@heig-vd.ch
GitHub	https://github.com/mlotfian
OrcID	https://orcid.org/0000-0003-3196-0373
Google Scholar	https://scholar.google.com/citations?view_op=list_works&hl=en&hl=en&user=DhFPe4YAAAAJ
Date of Birth	**21.09.1990**
Nationality	**Iranian**

Current Position

Position	**Postdoctoral researcher at University of Applied Sciences and Arts Western Switzerland**
Date	**April 2022 – Present**

Education

PhD	**Thesis:** Integration of machine learning and citizen science to address the challenges of public engagement and data validation
Date	**October 2017- April 2022** *Degree with Honours*
Name and type of organisation providing education and training	**Polytechnic University of Milan, Italy** **University of Applied Sciences and Arts Western Switzerland (HEIG-VD), Switzerland**
Research interest	**Volunteered Geographic Information** **Citizen Science** **Big data validation** **Spatial Statistics** **Machine Learning for data validation in VGI projects** **Species distribution modelling** **Satellite image analysis**
department	**Environmental and Geomatics Engineering**

Master of Science	**Thesis:** Local Climate Zone classification for city of Milan using satellite images
Date	**March 2014- September 2016**
Name and type of organisation providing education and training	**Polytechnic University of Milan, Campus of Como, Italy**

Duration of the program of study		**2 Years, Awarded GOLD Scholarship**
Title of qualification awarded		**Master of Environmental and Geomatics Engineering**

Bachelor of Science		**Thesis**: GIS-ready and updating geospatial features in maps of urbanized areas
Date		**October 2008 – October 2013**
Name and type of organisation providing education and training		**University of Tehran, Faculty of Engineering, School of Surveying and Geospatial Engineering**
Duration of the program of study		**4 Years**
Title of qualification awarded		**Bachelor of Geomatics Engineering**

Publications

Lotfian, M., Ingensand, J., and Brovelli, M. A.: AN APPROACH FOR REAL-TIME VALIDATION OF THE LOCATION OF BIODIVERSITY OBSERVATIONS CONTRIBUTED IN A CITIZEN SCIENCE PROJECT, Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XLVIII-4/W1-2022, 271–278, https://doi.org/10.5194/isprs-archives-XLVIII-4-W1-2022-271-2022, 2022.

Lotfian, M.; Ingensand, J.; Brovelli, M.A. The Partnership of Citizen Science and Machine Learning: Benefits, Risks, and Future Challenges for Engagement, Data Collection, and Data Quality. Sustainability 2021, 13, 8087. https://doi.org/10.3390/su13148087

Biraghi, C. A., **M. Lotfian**, D. Carrion, and M. A. Brovelli. 2021. "AI in Support to Water Quality Monitoring." ISPRS - International Archives of the Photogrammetry Remote Sensing and Spatial Information Sciences XLIII-B4-2021 (June): 167–74.

Lotfian, M., and J. Ingensand. 2021. "Using Geo Geo-Tagged Flickr Images to Explore the Correlation between Land Cover Classes and the Location of Bird Observations." ISPRS - International Archives of the Photogrammetry Remote Sensing and Spatial Information Sciences XLIII-B4-2021 (June): 189–94.

Lotfian, Maryam, Jens Ingensand, and Maria Antonia Brovelli. 2020. "A Framework for Classifying Participant Motivation That Considers the Typology of Citizen Science Projects." ISPRS International Journal of Geo-Information 9 (12): 704.

Lotfian, Maryam, and Jens Ingensand, "Combining Citizen Science and Machine Learning Techniques to Address the Two Main Issues of User Engagement and Data Validation in Citizen Science Projects,", Poster presentation at European Citizen Science Association (ECSA) conference, September 2020

Lotfian, Maryam, Jens Ingensand, Olivier Ertz, Simon Oulevay, and Thibaud Chassin. July 15-20, 2019. "Auto-Filtering Validation in Citizen Science Biodiversity Monitoring: A Case Study." In *Proceedings of the 29th ICA Conference*. Vol. 2. https://doi.org/10.5194/ica-proc-2-78-2019

Blanc, Nicolas, **Maryam Lotfian**; Maude Luggen, David Campisi, Olivier Ertz, Jens Ingensand. July 4-9, 2019. "Assessing urban accessibility for elder people using crowdsourced street images", *Proceedings of the Internatioanl Geographical Union, Urban Geography Comission, Luxembourge*,https://www.unil.ch/igu-urban/home/menuinst/meetings/2019-luxembourg/abstracts-of-participants.html

Dareshiri, Shokouh, Mohammadreza Sahelgozin, **Maryam Lotfian**, and Jens Ingensand. July 15-20, 2019. "Extracting Relationship between Air Pollution and Precipitation Using Spatio-Temporal Analysis in Tehran Metropolis." In *Proceedings of the 29th ICA Conference*. Vol. 2. https://doi.org/10.5194/ica-proc-2-23-2019.

Chassin, Thibaud, Jens Ingensand, **Maryam Lotfian**, Olivier Ertz, and Florent Joerin. 2019. "Challenges in Creating a 3D Participatory Platform for Urban Development." *Abstracts of the ICA* 1 (July). https://doi.org/10.5194/ica-adv-1-3-2019.

Lotfian, Maryam, Jens Ingensand, Sarah Composto, Monia Molinari, and Maria Antonia Brovelli. 17-20 June 2019. "The Relationship between Land Surface Temperature and Local Climate Zone Classification: A Case Study of the Canton Geneva, Switzerland." In *Proceedings of the 22nd Conference on Geo-Information Science, AGILE 2019, Limassol 17-20 June, Cyprus*.

Lotfian M, Ingensand J, Ertz O, Composto S, Oberson M, Oulevay S, Campisi D, Joerin F. 2018. Participants' motivations to contribute to biodiversity citizen science projects. *PeerJ Preprints* 6:e27198v1 https://doi.org/10.7287/peerj.preprints.27198v1

Ingensand, Jens, **Maryam Lotfian**, Olivier Ertz, David Piot, Sarah Composto, Mathias Oberson, Simon Oulevay, and Mélanie Da Cunha. 2018. "Augmented Reality Technologies for Biodiversity Education." In *Proceedings of the 21st Conference on Geo-Information Science, AGILE 2018, Lund 12-15 June, Sweden*. 12-15 June 2018.

Oxoli, Daniele, Giulia Ronchetti, Marco Minghini, Monia Molinari, **Maryam Lotfian**, Giovanna Sona, and Maria Brovelli. 2018. "Measuring Urban Land Cover Influence on Air Temperature through Multiple Geo-Data—The Case of Milan, Italy." ISPRS International Journal of Geo-Information, Managing the Global Commons: The Economics of Climate Change, 7 (11): 421

Abedini, A., **Lotfian, M**., and Moradi, M.: LAND USE COMPATIBILITY ASSESSMENT USING A MDIFIED TOPSIS MODEL: A CASE STUDY OF ELEMENTARY SCHOOLS IN TEHRAN, Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XL-1/W5, 5–10, https://doi.org/10.5194/isprsarchives-XL-1-W5-5-2015 , 2015

Work experiences

• Date (from – to)	**March 2013- December 2013**
• Name and address of firm	Zamin Tarsim Company
• Type of business or sector	GIS
• Type of employment	GIS expert
• Main activities and responsibilities	GIS ready, development of WebGIS applications, geospatial data processing

• Date (from – to)	**March 2012-October 2012**
• Name and address of firm	Naghshe Pardaz Rayane (NPR) Company
• Type of business or sector	GIS & RS
• Type of employment	Internship
• Main activities and responsibilities	GIS ready, Cartography, Remote Sensing, Urban Planning

• Date (from – to)	**March 2010-August 2010**
• Name and address of firm	University of Tehran
• Type of business or sector	Operations Geometry Surveying and Road Design
• Type of employment	Stage
• Main activities and responsibilities	Topography, Designing, Staking Out, Levelling

Technical skills and competences

OS:	Windows, Linux
PROGRAMMING LANGUAGE SKILLS:	HTML5, CSS3, JavaScript, Python, R, MATLAB, C#
Web FRAMEWORKS:	(Geo)Django, Flask
WEBSERVER:	Apache
WEB GIS	Leaflet, OpenLayers, GeoServer
GIS and RS packages (Python / R)	PySAL, SciPy (NumPy, Matplotlib, pandas), geopandas, shapely, spacetime, sp

ML/DL Libraries:	TensorFlow, Keras, scikit-learn, OpenCV
DBMS:	MySQL, PostgreSQL, PostGIS
Desktop GIS:	QGIS, ArcGIS, Grass GIS, SAGA GIS, GeoDa
Other Software:	SNAP, AutoCAD Map, Civil 3D, Urbis, Google Earth Pro, ENVI
VCS:	Git

Presentations at international meetings, seminars, and conferences

- **Invited Speaker at ISPRS TC IV Working Group 4 Webinar**, "*Machine Learning and Citizen Science*", 7th October 2021, https://www2.isprs.org/commissions/comm4/events/#!
- **Oral presentation at ISPRS online congress**, "AI IN SUPPORT TO WATER QUALITY MONITORING", June 2021.
- **Oral presentation at ISPRS online congress**, "USING GEO GEO-TAGGED FLICKR IMAGES TO EXPLORE THE CORRELATION BETWEEN LAND COVER CLASSES AND THE LOCATION OF BIRD OBSERVATIONS", June 2021.
- **CitSci Helvetia**, oral presentation, "A New Approach to Biodiversity Data Validation in Citizen Science Projects." 15 January 2021, Switzerland.
- **ECSA conference**, e-poster presentation, *Combining citizen science and machine learning techniques to address the two main issues of user engagement and data validation in citizen science projects*, 8th September 2020.
- COST Action: CA15212 - Citizen Science to promote creativity, scientific literacy, and innovation throughout Europe ECSA conference 2020, **Enhancing usability of the CS COST outcomes for future users**, Virtual meeting, 3rd September 2020
- Internal monthly seminar at institute INSIT, HEIG-VD, oral presentation on *Using machine learning algorithms in citizen science applications to simplify data validation processes and to sustain volunteers' participation*, 20th February 2020, Yverdon-les-Bains, Switzerland
- **GeoBeer Event**- Oral presentation of the work on participants' motivations and automatic data filtering in biodiversity citizen science projects, 28th November 2019, Yverdon-les-Bains, Switzerland
- Attended the International Symposium on **Location-Based Big Data** 2019, Tokyo, Japan
- Two oral presentations at the 29th **International Cartographic Conference** (ICC) in Tokyo, Japan in July 2019: "an auto-filtering data validation approach" and "analysing spatial auto-correlation between traffic and air pollution"
- **LSSR** (Laboratoires SIG de Suisse Romande), 24th June, 2019, Geneva, Switzerland
- Attended the workshop on **R for geo-visualization, geo-processing and geo-analytics**, June 2019, Limassol, Cyprus
- Oral presentation at the **22nd International AGILE** conference in Limassol, Cyprus, June 2019
- COST Action CA15212 in *Citizen Science and Environmental Monitoring*: Benefits and Challenges November 2019 JRC, and contributed to discussions and the meeting report: https://www.cs-eu.net/sites/default/files/media/2019/09/Report-WG3Workshop_CSandEM_2019112122Ispra.pdf
- COST Action CA15212 meeting in *Citizen science ontology*, and contributed to the discussions and final report: https://www.cs-eu.net/sites/default/files/media/2018/10/Deliverable%201%20-%20Citizen-science%20ontology%202018_09_13%20%28report%29.pdf
- COST Action CA15212 in *Citizen Science in Social Sciences and Humanities*, and contributed to the discussions and report: https://www.cs-eu.net/sites/default/files/media/2018/07/WG3_20180606_WorkshopReport_Geneva_CSinSSH.pdf

Language ability

Persian	English	French	Italian
Native	Upper C1	Upper B2	B1