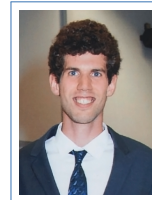# Francesco Ioli

*PhD student in Environmental and
Infrastructure Engineering @ DICA (Polimi)*

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Education and training

11/2020 – present	**PhD student in Environmental and Infrastructure Engineering**, *Department of Civil and Environmental Engineering, Politecnico di Milano*, (Italy), Specialization in geomatics, photogrammetry and image-based monitoring techniques, topography and GIS
2017 – 2020	**MSc Degree in Environmental and Land Planning Engineering**, *Politecnico di Milano*, (Italy), Grade 110L/110 Major in Land Monitoring and Diagnostics. MSc Thesis: *Evaluation of Airborne Image Velocimetry approaches with low-cost UAVs in riverine environments.* Supervisors: Prof. Livio Pinto (Politecnico di Milano), Dr. Martin Detert (ETH Zürich)
09/2019 – 01/2020	**Visiting student for MSc thesis development**, *ETH Zürich*, (Switzerland)
01/2019 – 05/2019	**Erasmus exchange**, *Aalto University*, Helsinki (Finland)
2014 – 2017	**BSc Degree in Environmental and Land Planning Engineering**, *Politecnico di Milano*, (Italy), Grade 102/110 *Snowpack surveys aimed at hydrological analysis: a case study carried out with UAVs and manual probing measurements on the Belvedere glacier (Macugnaga, Italian Alps).* Supervisor: Prof. Livio Pinto
2009 – 2014	**High school**, *Liceo Scientifico Falcone e Borsellino*, Arese (Italy), Grade 92/100

Working experience

Fall 2021 – 2022	**Teaching assistant**, Courses of *Trattamento delle Osservazioni* (teacher: Prof. B. Betti) and *Progettazione di Sistemi Informativi Territoriali* (teacher: Prof. F. Migliaccio), *Politecnico di Milano*
26 – 30/07/2021	**Tutoring**, Summer School *Design and execution of topographic surveys for land monitoring* at the Belvedere Glacier (Macugnaga–Italian Alps), *Passion in Action* course for BSc and MSc students, *Politecnico di Milano*
Spring 2020 – 2021	**Teaching assistant**, Courses of *Sistemi Informativi Territoriali* (teacher: Prof. F. Migliaccio) and *Tecniche di rilievo e modellazione 3D per l'architettura* (teacher: Prof. L. Pinto), *Politecnico di Milano*
Fall 2020 – 2021	**Teaching assistant**, Course of *Trattamento delle Osservazioni* (teacher: Prof. B. Betti), *Politecnico di Milano*
06/2020–10/2020	**Internship**, *Department of Civil and Environmental Engineering, Section of Geodesy and Geomatics, Politecnico di Milano*, Supervisor: Prof. L. Pinto
Spring 2019 – 2020	**Tutoring**, Course of *Tecniche di rilievo e modellazione 3D per l'architettura* (teacher: Prof. L. Pinto), *Politecnico di Milano*

Pubblications and Oral Presentations

2022	Ioli, F., Bianchi, A., Cina, A., De Michele, C., Maschio, P., Passoni, D., Pinto, L., 2022. Mid-Term Monitoring of Glacier's Variations with UAVs: The Example of the Belvedere Glacier. *Remote Sensing* 14, 28

2021	De Gaetani, C.I., Ioli, F., Pinto, L., 2021. Aerial and UAV Images for Photogrammetric Analysis of Belvedere Glacier Evolution in the Period 1977–2019. *Remote Sensing* 13, 3787.
2021	Ioli, F., Pinto, L., and Ferrario, F., 2021. Low-cost Assisted Aerial Triangulation for Sub-decimetric Accuracy with non-RTK UAVs. *Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.* XLIII-B2-2021, 25–32
2021	Rossi, L., Ioli, F., Capizzi, E., Pinto, L., and Reguzzoni, M., 2021. Improving UAV Telemtry Positioning for Direct Photogrammetry. *Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.* XLIII-B2-2021, 61–68.
2020	Ioli, F., Pinto, L., Passoni, D., Nova, V., Detert, M., 2020. Evaluation of Airborne Image Velocimetry approaches using low-cost UAVs in riverine environments. *Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.* Vol.XLIII-B2-2020, 597–604.
23/03/2018	Presentation of the BSc thesis at DRONITALY 2018 - Working with Drones, Milan

Languages

Italian	Mother tongue
English	C1 *IELTS* certificate (19/07/2018) - British Council

Technical skills

Programming	Matlab, Python, R	Photogrammetry	Agisoft Metashape, PhotoModeler, CloudCompare, MeshLab
GIS	QGIS, ESRI ArcGIS Pro & ArcGIS Desktop, ENVI	GNSS post-processing	Leica Infinity & Leica Geo Office, RTKLIB
CAD & 3D modelling	AutoCAD, ReCap, Autodesk Fusion 360, Rhino	Image processing	Adobe Photoshop & Lightroom, GIMP, RawTherapee, Inkscape
UAVs	UgCS, Mission Planner	OS	Windows, Linux OS (Debian)

Additional information

Professional qualification

07/2020	*Esame di Stato* for Civil and Environmental Engineers

Licences

Driving license	B
UAS license	EASA A2 Open Category, with license for critical standard scenarios

Volunteer experiences

2017–2021	Scout chief: children's educator in the Italian Scout association *AGESCI*
2016–2017	Volunteer for *Operazione Mato Grosso* (charity organization)
2012–2016	Volunteer for *Libera. Associazioni, Nomi e Numeri contro le mafie*

August 21, 2022