

## EDUCATION

### Politecnico di Milano

Master Degree | 2024 - present

Environmental and land planning engineering,  
Land Protection and Prevention from Natural Risks

Bachelor Degree | 2021-2024

Environmental and land planning engineering,  
graduated in September 2024  
Final mark: 104/110

### Liceo scientifico statale "F. Severi", Frosinone

Scientific High School Diploma

graduated in June 2021

Final mark: 100 cum laude/100

### Exchange semester program

July 2019-December 2019

Lynfield College, Auckland (NZ)

Hosted by a local family

## UNIVERSITY PROJECTS

### Spatial planning

Masterplan for the Valtellina area (Italy), with requalification of dismissed areas, realization of co-working spaces. Improvements in the energy sector. Pilot-project with implementation of the general strategies highlighted.

### Hydrogeological risk

Simulation of peak discharges for selected return periods starting from real data using different statistical and hydrological methods. Realization of flood maps, steady-flow analysis of rivers profiles, risk assessment applied to dam safety. Use of QGIS, RStudio and HEC-RAS.

### Geotechnical cases of study

- Stability and filtration analysis for the Lambro river's levee in the area of Parco Lambro (Milano) by the means of GeoStudio. Sensitivity analysis for the results.
- Axially symmetric consolidation of a clay layer on impervious base. Time evolution of the settlement at the centre of the loaded area, evaluation of the influence of the mechanical characteristics of the layer. Load applied at different time intervals. Analysis by the means of Abaqus/CAE.

### Statistic analysis

Descriptive and inferential statistics on real data about oil spills from pipelines in the US (years 2010-2017). Use of RStudio and ArcGIS.

## FRANCESCA DE ROSA

### ENVIRONMENTAL ENGINEERING GRADUATE STUDENT

#### Technical skills

Software proficiency: Microsoft Office, ArcGIS, QGIS, Abaqus/CAE, GeoStudio, HEC-RAS, Groundwater Vistas

Coding languages: C, MATLAB, SQL

Data analysis tools: Excel, R

#### Language skills

Italian (Native), English (C1)

### INTERESTS

- power generation systems
- environmental economy
- traveling and learning about new cultures
- attending courses and workshops in scientific field

## EDUCATIONAL ACTIVITIES

### Water and food security, scientific paper

Water conservation/restriction policy on agricultural production: The case of Po River.

### Groundwater and river applied modelling

Case of study: Basento river (South of Italy).

Analysis of the interaction between groundwater and superficial water bodies. Hydraulic simulations by the means of HEC-RAS. Groundwater conceptual model and transport simulation by the means of Groundwater Vistas 9 (ModFlow 2005).

Open participation teaching activities offered by Politecnico di Milano to develop social and soft skills (Passion In Action).

- 2025- Building the future: management, innovation and sustainability in big construction sites for infrastructures.
- 2023- Raccontare la scienza (how to communicate science).
- 2022 Soil, the most invisible and precious ecosystem.

PoliMi Open Knowledge

MOOCs (Massive Online Open Courses) to bridge the gap. Upon completion of the MOOCs, a certificate is issued, either as an Open Badge or a Certificate of accomplishment

- 2025- Ethics of Artificial Intelligence.
- 2025- Sustainable farm design in developing Countries.

Strategies for environmental challenges (2024)

Simulation of the environmental decision-making process. Interaction between different stakeholders.

Case of study: Seveso-Lambro-Olona rivers system. Masterplan for the entire area, pilot-project in a selected location with implementation of nature-based engineering solutions.

Buddy project (2022-2023)

Assistance to international students in the phase prior their arrival and over their first period in Milan and at Politecnico. Acquired skills: time management, organisational ability, teamwork, flexibility and adaption, communication capacity and problem solving.

PoliCollege: Game theory (2021)

Summer school held online for high school students by Politecnico di Milano.

Erasmus Plus- KA2 (October 2018)

Uhtna Pohikool, Rakvere Parish, Estonia  
Hosted by local a family

Summer School of Astronomy (2017)

Training Program for the Astronomy Olympiad, held by 'Società Astronomica Italiana' (SAIt) and 'Istituto Nazionale di Astrofisica' (INAF)

English courses (15 days learning period)

- 2022- IH Cape Town - English School, CAPE TOWN - SOUTH AFRICA;
- 2018- Keiser University, WEST PALM BEACH - US;
- 2017- UNIVERSITY OF KENT AT CANTERBURY, CANTERBURY - UK