



## CURRICULUM VITAE Mr. DANIELE BATTAGLIA

### Engineering and Structural Geologist

Born in Carate Brianza (Italy) on 18 July 1968

Address: via Stelvio 20  
20844 Triuggio (MI) - Italy

Telephone: +39-0362-972440 Fax : +39-0362-997695 Mobile: +39-335-7069973

E-mail: [dbattaglia@georisk.it](mailto:dbattaglia@georisk.it) Skype: dbattaglia.georisk

#### FIELDS OF EXPERTISE

- Geological and geotechnical expert for hydropower plants and tunnels
- Engineering Geology, Rock and Soil Mechanics
- Ground Risk evaluation
- Geological, geomorphological and hydrogeological studies
- Geotechnical characterization of soils and rock masses
- 3D Geological modeling
- Planning, management and supervision of site investigations and monitoring systems
- Photointerpretation, GIS, remote sensing and historical site reconstruction
- Close range and aerial photogrammetry with UAV

#### QUALIFICATIONS

- Chartered Italian Geologist and Principal of Studio Georisk
- Member of the International Society of Rock Mechanics (ISRM), International Association of Engineering Geologists (IAEG), Italian Geotechnical Association (AGI), Italian National Committee for Large Dams (ITCOLD), International Association for Natural Hazard Risk Management (EcorisQ)
- Dam Security Board Member for El Cajon Dam, National Electric Power Company (ENEE) of Honduras (2017 – 2019)
- Geotechnical Member of the Panel of Expert for the development of the St. Paul River in Liberia, WAPP (2019-2020)
- Counselor and Treasurer of the Lombardia Board of Geologists (2001-2005)

#### EDUCATION

- Master of Science in Engineering Geology, (September 1995)  
Royal School of Mines: Imperial College of Science, Technology and Medicine - London, England.  
Dissertation: The Gurzia Dam, Italy. Site Investigation and Foundations Stability Analysis.  
Academic Honors: Distinction and Lapworth Medal Award.
- Laurea Degree (MS equivalent) in Geological Sciences, (March 1993).  
Universita' degli Studi - Milan, Italy.  
Dissertation: Structural study of metamorphic complexes in Belviso and Campovecchio Valleys, Italy".  
Academic Honors: Graduated Summa cum Laude.
- Extended studies:
  - Course on Geotechnics and Geomechanics for Energy Projects (February 2019), University of Milan
  - Course on Safety measures for works at height and on rope (April 2016), Trentino Alpine Guides
  - Course for Unmanned Aerial Vehicles pilot license (February 2016), GeoskyLab
  - Course on Reservoir Geomechanics (April-May 2014), Stanford University
  - Course on Seismic Geotechnics (October 2012), CISM Udine
  - Course on Advanced method for the remediation of contaminated sites (May 2009), Province of Milan
  - Course on SAR Satellite Interferometry for monitoring ground movements (July 2007), TRE-Europa, Milano
  - Course on Avalanche dynamics, (June 2005), SUPSI (Professional University of Switzerland), Lugano, CH
  - Course on Foundation Geotechnics, (June 2004) University of Pavia - Lombardia Board of Geologists
  - Course on Debris Flows (May-June 2003), SUPSI (Professional University of Switzerland), Lugano, CH
  - Course on Rock Anchors (October 2002), ANAS (Italian Road and Highway Agency)
  - Course on Bio-engineering for soil conservation (March 2001), Regional School on Bio-engineering
  - Course on Polluted Sites: investigation and remediation (June 2000), Politecnico of Milano
  - Course on Pumping Tests (January 2000), Lombardia Board of Geologists
  - Course on Finite Elements Principles and Practice (April - June 1998), University of California at San Diego.
  - Course on Mechanical Tunneling, Raise Boring and Shaft Drilling (February 1998), Colorado School of Mines
  - Course on Slope stability analysis in soils (June 1997), Lombardia Board of Geologists
  - Course on Concrete in aggressive environment (November 1996) ATE
  - Course on Regulations in engineering geology practice (November 1995), Lombardia Board of Geologists
  - Course on Snow and Avalanches (November 1991), Regione Lombardia.

## TEACHING AND LECTURES

- Lecturer for a 1 day workshop on “Geology and Geotechnics of Hydropower Plants” for Celec, Ecuador (2020)
- Lecturer for a 3 days workshop on “Geology and Geotechnics of Hydropower Plants” for PLN/KfW, Indonesia (2019)
- Lecturer on “Site Investigation planning and case histories” at the Master for Tunneling Engineering, Politecnico di Milano (2017 and 2019 Edition)
- Adjunct Professor of “3D Geological Modeling” at the University of Studies of Milan (2007-2009)
- Presentation on “Anthropic Evolution and Engineering Geology of Milan”, New geological cartography of Milan Symposium, Milan, (May 2017)
- Presentation on “Landslide Hazard: Risk Zonation and Impact Wave Analysis for the Bumbuna Dam-Sierra Leone”, XII International IAEG Congress, Torino (September 2014)
- Presentation on “Fluorescent Tracer Tests for Detection of Dam Leakages”, 2th ICOLD European Symposium, Venice (April 2013)
- Lecture on “Historical reconstruction of pollutes sites by remote sensing”, Course on Polluted Sites Remediation, Italian Society of Environmental Geology, Naples, (July 2008)
- Lecture on “Geotechnical Baseline Report” within the Workshop on Quantification of the geological model reliability in large civil engineering projects, Technical Commission of the Italian IAEG group (June 2008)
- Lecture on the “Definition of the Geological Model for the Preliminary Design of the Genoa Highway Interconnection”, Earth Science Seminary, University of Milan (May 2007)
- Lecture on the “Geology of the Lambro Valley Park”, Triuggio Municipality (May 2003)
- Lecture on “Geological, geotechnical and environmental Site Investigations” within the Course on Rock Anchors (October 2002), ANAS (Italian Road and Highway Agency)
- Lecture on “Site Investigations for soils and rocks” within the course on Measurement techniques in Geo-Environmental Field, ISA-AIS (February 2000)

## COMPUTER SKILLS

- MS Office, CAD and GIS software
- Geodatabase and 3D geological modelling
- Geotechnical and photogrammetric software

## LANGUAGES

- Italian: native
- English: fluent reading, speaking and writing
- Spanish: fluent reading, speaking and writing

## COUNTRIES OF WORK EXPERIENCE

Argentina, Armenia, Bosnia, Bulgaria, Cameroun, Chile, Colombia, Croatia, Ecuador, Ethiopia, France, Georgia, Greece, Guatemala, Honduras, India, Indonesia, Iran, Italy, Kenya, Liberia, Montenegro, Nepal, Panama, Peru, Sierra Leone, Tajikistan, Uganda, USA, Venezuela, Zambia

## PROFESSIONAL EXPERIENCE

Projects location and data available online from this [LINK](#)

- **January 2000 to present**  
**PRINCIPAL OF STUDIO GEORISK**  
 Major projects:

### DAMS AND HYDROELECTRIC POWER PLANTS

#	Year	Country	Project/Activity	Client
			<b>Chivor Hydroelectric Project (1000MW)</b>	
60	2020	Colombia	<i>Rockfill dam with clay core 310m long x 237m high</i> Geotechnical assessment for power tunnel lining refurbishment	Lombardi
			<b>Baba HPP (42MW)</b>	
59	2019-2020	Ecuador	<i>System of 4 earth dams with clay core up to 1700m long and 30m high</i> Post-earthquake assessment of dam integrity	Lombardi
			<b>Daule Peripa HPP (213)</b>	
58	2019-2020	Ecuador	<i>Earth dam 260m long and 85m high</i> Post-earthquake assessment of dam integrity	Lombardi
			<b>Aarakot HPP (80MW)</b>	
57	2019-2020	India	<i>Run of River with a 10km Headrace Tunnel</i> Geological and geotechnical study for detailed design	Lombardi
			<b>Pomacocha Dam – Lima water supply system</b>	
56	2019-2020	Peru	<i>20m raising of an existing earth dam 400m long and 20m high</i> Geological, hydrogeological and geotechnical risk assessment	Lombardi

55	2019-2020	Peru	<b>Nimpana HPP (18MW)</b> <i>Run of River with a 7.5km conduction line by tunnel and pipeline</i> Due diligence of the geological and geotechnical conditions	Lombardi
54	2019-2020	Peru	<b>Toquepala Mine Dike DC4</b> <i>Earth dike 450m long x 20m high</i> Geological and geotechnical study for detailed design	Lombardi
53	2019-2020	Honduras	<b>Picacho water storage reservoirs</b> <i>Earthfill dyke</i> Geological assessment for tender	Lombardi
52	2019-2020	Honduras	<b>San Jose water storage reservoirs</b> <i>Rockfill/RCC dam 180m long x 40m high</i> Geological assessment for tender	Lombardi
51	2019	Honduras	<b>El Tornillito Power Plant (200MW)</b> <i>RCC/Hardfill dam 440m long x 83m high</i> Geological assessment for Due Diligence	Lombardi
50	2019-2020	Liberia	<b>Mount Coffee HPP and St. Paul River Development (600MW)</b> <i>Various Concrete Face Rockfill and Earth dams</i> Panel of Experts Geotechnical Member	West Africa Power Pool
49	2019-2020	Tajikistan	<b>Sebzor Hydroelectric Project (10MW)</b> <i>Run of river intake with 2.8km headrace pipeline</i> Geological-Geotechnical Short Term Consultancy for project evaluation	World Bank
48	2019	Colombia	<b>Chivor Hydroelectric Project (1000MW)</b> <i>Rockfill dam with clay core 310m long x 237m high</i> Geological assessment during construction of a new intake structure	Lombardi
47	2018	Honduras	<b>Petuncara Hydroelectric Project (5MW)</b> <i>Run of river intake with 4km headrace pipeline</i> Geological assessment for Due Diligence	Lombardi
46	2018-2019	Honduras	<b>Humuya Hydroelectric Project (15MW)</b> <i>Run of river with 4km headrace channel</i> Geological assessment for Due Diligence and Feasibility Study	Lombardi
45	2018	Perù	<b>San Rafael Mine B4 Tailing dam</b> <i>Tailing dam 440m long x 40m high to be raised of 40m</i> Geological assessment for dam foundations	Lombardi
44	2018	Perù	<b>Majes Hydroelectric Project (300MW)</b> <i>Run of river intake with 15km headrace tunnel</i> Hydrogeological Study for detailed design	Lombardi
43	2018-2019	Kenya	<b>Kimwarer Multipurpose Project (20MW)</b> <i>Earth dam 430m long x 40m high</i> Geological study, site investigation plan and geotechnical characterization for detailed design	Lombardi
42	2018-2020	Colombia	<b>Hidroituango Hydroelectric Project (2400MW)</b> <i>Rockfill dam with clay core dam 675m long x 225m high</i> Geological-geotechnical expertise for plant rehabilitation after flood damages	Lombardi
41	2018	Montenegro	<b>Djuricka 1-2 Hydroelectric Project (4MW)</b> <i>Run of river intake with 3km headrace pipeline</i> Geological assessment for Due Diligence	Lombardi
40	2018-2019	Honduras	<b>Chachaguala 2-3 Hydroelectric Project (21MW)</b> <i>Run of river intake with 1.1km headrace tunnel</i> Geological study for feasibility and basic design	Lombardi
39	2018-2019	Honduras	<b>La Vegona 2 Pump Store Plant (120MW)</b> <i>Earth dike with HDPE lining and excavations for a 1.3Mm<sup>3</sup> reservoir</i> Geological assessment, site investigation plan and geotechnical characterization for feasibility and basic design	Lombardi
38	2018	Ecuador	<b>Mazar Dudas Hydroelectric Project (21MW)</b> <i>Run of river intake with 3km headrace pipeline</i> Geological survey, site investigation plan and geotechnical characterization for re-design of penstock and powerhouse alignment	Lombardi

37	2018-2019	Kenya	<b>Error Multipurpose Project (60MW)</b> <i>Concrete Face Rockfill Dam 480m long x 90m high</i> Geological study, site investigation plan and geotechnical characterization for detailed design	Lombardi
36	2018	Ecuador	<b>Abitagua Hydroelectric Project (100MW)</b> <i>RCC Dam 300m long x 74m high</i> Geological survey for Feasibility study	Lombardi
35	2017	Nepal	<b>Solu Khola Hydroelectric Project (80MW)</b> <i>Run of river intake with 4.5km headrace tunnel</i> Geological study, site investigation plan and geotechnical characterization for detailed design.	Lombardi
34	2017-2018	Chile	<b>Los Condores Hydroelectric Project (150MW)</b> <i>Connection to existing dam by a 12km headrace tunnel</i> Geological assessment during construction	Lombardi
33	2017	Perù	<b>San Miguel I e II Hydroelectric Projects (40MW)</b> <i>Run of river intake with 4km headrace channel</i> Geological scouting for optimization of the plant scheme	Enel GP
32	2017-2019	Honduras	<b>El Cajon Power Plant (300MW)</b> <i>Concrete Arch Dam 282m long x 226m high</i> Member of the Dam Security Board	ENEE
31	2017	Honduras	<b>El Tablon Hydroelectric Project (40MW)</b> <i>RCC dam 320m long x 76m high</i> Review of geological-geotechnical model for construction bidding	Lombardi
30	2016-2017	Perù	<b>Ayanunga Hydroelectric Project (20MW)</b> <i>Run of river intake with 6.5km headrace channel</i> Geological survey, site investigation plan and geotechnical characterization for basic design	Lombardi
29	2016	Honduras	<b>Arenal IV Hydroelectric Project (50MW)</b> <i>Concrete dam 160m long x 40m high</i> Preliminary geological study for Due Diligence	Lombardi
28	2016	Uganda	<b>Sisi and Cresta Hydroelectric Project (10 and 8MW)</b> <i>Run of river intake with 6.5km headrace pipeline</i> Geological assessment and site investigation plan for design bidding	Zollet
27	2016	Perù	<b>Zana II Hydroelectric Project (8MW)</b> <i>Run of river intake with 2km headrace channel</i> Geological mapping and study for Feasibility design	Lombardi
26	2015	Cameroun	<b>Grand Eweng Hydroelectric Project (1800MW)</b> <i>Earth and RCC dam 3.8km long x 80m high</i> Site visit and geological assessment for design bidding	Lombardi
25	2015	Ecuador	<b>Alambi-Tulipe Hydroelectric Project (10MW)</b> <i>Run of river intake with 600m headrace channel and 600m tunnel</i> Geological and geotechnical assessment for Feasibility design	Lombardi
24	2015-2019	Honduras	<b>Arenal I and II Hydroelectric Project (50MW)</b> <i>RCC arch-gravity dam 260m long x 90m high</i> Geological – Geotechnical study for Feasibility to Detailed Design. Geological supervision during construction.	Lombardi
23	2015	Perù	<b>Santa Lorenza I and II Hydroelectric Project (18 and 8MW)</b> <i>Run of river intake with 6.8km headrace tunnel</i> Geological and geotechnical study for Feasibility design	Lombardi
22	2015	Zambia	<b>Kafue Gorge Small Hydropower Station (10MW)</b> <i>Run of river intake with 5.9km headrace tunnel</i> Geological - geotechnical study for Feasibility design and site selection	Zollet - Gopa
21	2014-2016	Ecuador	<b>Santiago G8 Hydroelectric Project (3600MW)</b> <i>RCC arch gravity dam 457m long x 205m high</i> Review and validation of the geological and geotechnical model	Lombardi

20	2014	Guatemala	<b>La Campana Hydroelectric Project (60MW)</b> <i>Run of river intake with 4.5km headrace tunnel</i> Geotechnical study for Feasibility design and selection of tunnel alignment	Solel Boneh
19	2014	Honduras	<b>Jacaleapa Hydroelectric Project (15MW)</b> <i>Arch dam 110m long x 72m high</i> Site visit, aerial photogrammetry and site investigation plan	Lombardi
18	2014	Bulgaria	<b>Neikovtzi Dam (Water storage)</b> <i>Rockfill dam with asphalt core 230m long x 50m high</i> Geological survey, site investigation plan, geological - hydrogeological model and geotechnical characterization	Stucky
17	2013	Guatemala	<b>Santa Maria de Jesus Dam (25MW)</b> <i>Arch dam 75m long x 30m high</i> Geological survey and risk assessment for dam security analysis	Lombardi
16	2013	Ecuador	<b>San Vicente Dam (Water storage)</b> <i>Earth dam 1.5km long x 30m high</i> Geotechnical advice for spillway instabilities due to slaky claystones	Odebercht
15	2013-2014	Guatemala	<b>El Volcan Hydroelectric Project - Dam site (26MW)</b> <i>Run of river intake with 2.5km headrace tunnel</i> Geological study for dam site selection, photogrammetric survey	Lombardi
14	2012-2015	Honduras	<b>Santa Maria de Quipúa Dam (40MW)</b> <i>Arch-gravity dam 120m long x 80m high</i> Geological and photogrammetric survey, speleological exploration, geological model, site investigation plan, geotechnical assessment	Lombardi
13	2012	Honduras	<b>Ojo de Agua Hydroelectric Project (20MW)</b> <i>Run of river intake with 2.8km headrace tunnel</i> Geological expertise during construction	Lombardi
12	2011-2015	Ethiopia	<b>Great Ethiopian Reinassance Dam - Main Dam e Spillway (6000MW)</b> <i>RCC gravity dam 1.8km long x 180m high</i> Geostructural and photogrammetric surveys, geological and hydrogeological model, dam foundations geotechnical characterization	Studio Pietrangeli
11	2010-2012	Ecuador	<b>Chespì - Palma Real Hydroelectric Project (450MW)</b> <i>Arch dam 144m long x 70m high</i> Geostructural survey, dilatometer test, borehole optical survey, geotechnical assessment, paleoseismological study .	Asociacion LPC
10	2010	Italy	<b>Ca Selva Dam (10MW)</b> <i>Arch dam 300m long x 110m high</i> Geostructural survey and wedges stability analysis	Edison
9	2009	Sierra Leone	<b>Yiben Hydroelectric Project (66MW)</b> <i>RCC dam 665m long x 86m high</i> Site Investigation Plan	Studio Pietrangeli
8	2007	Ethiopia	<b>Gibe II Hydroelectric Project (420MW)</b> <i>Gravity dam 168m long x 55m high with 25.8km headrace tunnel</i> Geotechnical model review, geological risk analysis for insurance	DMS
7	2007	Ethiopia	<b>Gibe III Dam (1870MW)</b> <i>RCC gravity dam 620m long x 250m high</i> Geotechnical assessment of the dam foundations	Studio Pietrangeli
6	2007-2012	Italy	<b>Somplago Hydroelectric Plant (166MW)</b> <i>Arch dam 55m high with 8.5km headrace tunnel</i> Site investigations, geological and hydrogeological model, geotechnical assessment, hydrogeological monitoring	Edipower
5	2006	Ethiopia	<b>Beles MPP Project (450MW)</b> <i>Tana lake intake with 11km headrace tunnel and 8km tailrace tunnel</i> Hydrogeological model and geotechnical assessment	Studio Pietrangeli

4	2006	Sierra Leone	<b>Bumbuna Dam (50MW)</b> <i>Rockfill dam with asphalt face 450m long x 88m high</i> Landslide risk assessment along the reservoir and Fluorescent tracer test for detection of dam leakages	Salini Costruttori
3	2005	Italy	<b>Bomba Hydroelectric plant (58MW)</b> <i>Earth dam 260m long x 57m high</i> Geotechnical study of the dam foundation	Geol. Azzoni
2	2001	Italy	<b>Scais Hydroelectric plant (22MW)</b> <i>Hollow gravity dam 400m long x 65m high</i> Geological study for instabilities along the headrace channel	Enel.Hydro
1	2000	Italy	<b>Ceppo Morelli Dam (22MW)</b> <i>Arch dam 40m long x 46m high</i> Geostructural survey of the dam abutments	Edison

#### TUNNELS AND UNDERGROUND WORKS

19	2020	Argentina	<b>Zonda Tunnel (1000m)</b> Review of the geological-geotechnical model	Lombardi
18	2019	Perù	<b>Trasandino Tunnel (9980m) – Marca 2</b> Geological, hydrogeological and geotechnical risk assessment	Lombardi
17	2019	Bosnia	<b>Ivan Tunnel (1700m) – Tarcin Konjic Motorway</b> Geological-geotechnical assessment for construction tender	Vittadello
16	2018	India	<b>Mumbai Coastal Road (3900m)</b> Site investigation plan, geological and geotechnical characterization	Lombardi
15	2017	Armenia	<b>Artashat – Sisian Highway – 9 Tunnels (12000m)</b> Field mapping, 3D geological model, geotechnical characterization	SPEA
14	2016	Armenia	<b>Sisian – Kadjaran Highway Base Tunnel (8640m)</b> Field mapping, 3D geological model, geotechnical characterization	SPEA
13	2015	Perù	<b>Carretera Interoceánica Perú – Brasil – Tunel km 240 (2200m)</b> Geological and geotechnical study	Lombardi
12	2013-2015	Ecuador	<b>Quijos Hydroelectric Project - Papallacta, Quijos and Principal Tunnels</b> Review of the geological model, geotechnical assessment, risk analysis	Astec Integral
11	2013	Italy	<b>Morbegno Tunnels - National Route 38</b> Geological and geotechnical assessment for construction tender	Strabag
10	2012	Ecuador	<b>Pucará Hydroelectric Plant - Headrace Tunnel Remediation</b> Geological model, geotechnical assessment, on site geologist for construction management	Lombardi
9	2011-2015	Italy	<b>Kiens Tunnel - National route 49 (1000m)</b> Geological and hydrogeological model, geotechnical assessment	Provincia di Bolzano
8	2011	Panama	<b>Monte Lirio and Pando Hydroelectric Tunnels</b> Geological and geotechnical assessment during construction	Lombardi
7	2011	Panama	<b>Esti Hydroelectric Plant - Headrace Tunnel Remediation</b> Geological and geotechnical assessment for swelling rocks	Lombardi
6	2007-2012	Italy	<b>Somplago Hydroelectric Plant - Phase 2 Headrace Tunnel (8800m)</b> Geological and hydrogeological model, geotechnical assessment	Edipower
5	2007	Italy	<b>Monte Trattunale Railway Tunnel</b> Geological and hydrogeological model, geotechnical assessment	AK Ingegneria
4	2006	Italy	<b>Genoa Gronda Project - Section Vesima Val Varenna</b> Geological and hydrogeological model, springs survey, geostructural survey, feasibility study for TBM excavation	SPEA
3	2002	Italy	<b>Passo della Morte Tunnel - National route 52</b> Geological model and landslide analysis	Vidoni
2	2002	Italy	<b>Sellero, Capodiponte e Berzo Demo Tunnels - National route 42</b> Geological and geotechnical assessment	Soil

1	2000	Italy	<b>Bema Tunnel - Morbegno</b> Geological and geotechnical assessment	Regione Lombardia
<b>HIGHWAYS</b>				
14	2020	Georgia	<b>Batumi - Sarpi Highway</b> Geological and geotechnical study and site investigation management for basic design	SPEA
13	2019	Italy	<b>Torino - Savona Highway</b> Geological and geotechnical studies for technological installations	SINA
12	2017	Italy	<b>SS398 Highway – A12- Piombino Port connection</b> Geological and geotechnical characterization for foundations design	ANAS
11	2017	Georgia	<b>Batumi - Sarpi Highway</b> Remote sensing analysis and field surveys for highway route selection	SPEA
10	2016	Armenia	<b>Sisian – Kadjaran Highway</b> Field mapping, geological and geotechnical characterization	SPEA
9	2015	Perù	<b>Carretera Interoceánica Perú Brasil - Llocllamayo landslide bypass</b> Geological mapping, site invest. manag., debris flow risk assessment	Lombardi
8	2013-2014	Italy	<b>Torino - Savona Highway</b> Geological and geotechnical studies for technological installations	SINA
7	2009-2013	Italy	<b>Cisa Highway</b> Geological and geotechnical studies for technological installations	SINA
6	2010	Italy	<b>Asti - Cuneo Highway</b> Geological and geotechnical studies for tollgates portals	SINA
5	2010	Italy	<b>Broni - Mortara Highway</b> Geological, geomorphological and hydrogeological study	A&T Consulting
4	2009	Italy	<b>Torino - Milano Highway</b> Geological and geotechnical studies for technological installations	SINA
3	2009	Italy	<b>Pedemontana Veneta</b> Geomorphological survey, geological and hydrogeological model	AK Ingegneria
2	2007	Italy	<b>Macrolotto 2 - Salerno Reggio Calabria Highway</b> Geological model, geomorphological analysis, geotechnical assessment	SIS
1	2005-2006	Italy	<b>RAV - Valle d'Aosta Highway</b> Geological and geotechnical studies for secondary roads	SINA
<b>LANDSLIDES AND SLOPE STABILITY</b>				
11	2016-2017	Italy	<b>Kiens ring road - National route 49</b> Geomorphological survey, Rockfall 3D analysis and hazard zonation	Provincia Bolzano
10	2013	Italy	<b>Rividulano site – Corniglio (PR)</b> Geostructural survey and rockfall analysis	Studio Puccinelli
9	2009	Italy	<b>Monno - Valvedello road - Piateda (SO)</b> Rockfall risk analysis and preliminary design of the remediation measures	Edison
8	2008	Sierra Leone	<b>Bumbuna Dam</b> Geomorphological survey, Landslide hazard and risk analysis	Studio Pietrangeli
7	2008	Italy	<b>Avigliana landslide - Avigliana (TO)</b> Expert witness for legal dispute	Musinet
6	2007	Italy	<b>Macrolotto 2 - Salerno Reggio Calabria Highway landslides</b> Geomorphological study and slope stability analysis	AK Ingegneria
5	2004-2009	Italy	<b>Val Orsara landslides - Fusine (SO)</b> Geological - geotechnical study	Provincia di Sondrio
4	2003	Italy	<b>Bedolesso landslide - Colico (LC)</b> Geological - geotechnical study	Comune di Colico

3	2002	Italy	<b>Naquane landslide - Capodiponte (BS)</b> Geostructural survey and rockfall analysis	Soil
2	2001-2013	Italy	<b>Valpola landslide - Valdisotto (SO)</b> Site investigations construction management and inclinometers monitoring	Regione Lombardia
1	2001	Italy	<b>Scais Hydroelectric plant - Piateda (SO)</b> Geological study for instabilities along the headrace channel	Enel.Hydro
<b>ENVIRONMENTAL</b>				
10	2015	Italy	<b>Illegal landfills identification</b> Historical reconstruction of regional quarry and landfill activities from aerial photos and satellite images	ASM Pavia
9	2011-2013	Italy	<b>Remediation of the ex area Falck - Sesto San Giovanni (MI)</b> Historical reconstruction from aerial photos and detection of World War II bombed areas	Globo Service
8	2013	Italy	<b>Somplago Hydroelectric Plant</b> Environmental study for the disposal of sludge produced by TBM-EPB	Edipower
7	2004-2010	Italy	<b>Remediation of the ex area Sasatex - Biassono (MB)</b> Site assessment, remediation design and construction management	Immob. Elisa
6	2009	Italy	<b>Remediation of the ex area Colussi - Montebello della Battaglia (PA)</b> Historical reconstruction from aerial photos	Globo Service
5	2007	Italy	<b>Remediation of the Bacchu Locci mine - Villapuzzu (CA)</b> Geological and geotechnical model	Montana
4	2004	Italy	<b>Refurbishment of 25 AGIP ENI petrol stations - Various municipality</b> Environmental investigations for plant refurbishment	ENSR
3	2004	Italy	<b>Remediation of the ABC Farmaceutica - Trecate (NO)</b> Historical reconstruction from aerial photos	ENSR
2	2003	Italy	<b>Remediation of the ex area Flucosit - Asola (MN)</b> Historical reconstruction from aerial photos	Globo Service
1	2002	Italy	<b>Benago Quarry Landfill - Sadrina (BG)</b> Feasibility study for a sanitary landfill	GTA srl

• **December 1998 to December 1999**

Company: **GEODATA Spa**, Turin, Italy

Position: SENIOR ENGINEERING GEOLOGIST

Projects:

- Tazon and Pitahaya Railroad Tunnels, Venezuela: On site Tunnel Design Representative
- Harstovec and Vrtlinovec Highway Tunnel, Croatia: hydrogeological impact evaluation
- Val Vigezzo Road, Italy: risk analysis for landslides and rock fall
- Sorenberg Hydroelectric Tunnel, Switzerland: ground condition evaluation for TBM design
- Salerno-Reggio Calabria Highway, Italy: geological and geotechnical study of Renazza and Monte Sirino tunnels
- Kandovan and Taloon Tunnels, Iran: geotechnical characterization
- Egnatia Odos Highway, Greece: geological and geotechnical audit of  $\Sigma 2$ ,  $\Sigma 3$  e  $\Sigma 4$  Tunnels

• **November 1997 to November 1998**

Company: **BECHTEL Inc., OWENS Geotechnical Inc. and Costal Consultant Inc.**

Position: SENIOR ENGINEERING GEOLOGIST

Projects:

- Arrowhead Water Tunnels, San Bernardino CA - USA: temporary site geologist
- Point Vicente Park Extension, Rancho Palos Verdes CA - USA: site investigations for building expansion
- US Fishery Buildings, La Jolla CA - USA: site investigations for cliff stability

• **January 1996 to November 1997**

Company: **ROCKSOIL Spa**, Milan, Italy

Position: ENGINEERING GEOLOGIST, HEAD OF THE GEOLOGICAL OFFICE

Projects:

- Naples subway Line 1 (Dante - Garibaldi): SI plan, geological model and geotechnical characterization

- Montenero Tunnel: assessment of consolidation grouting efficiency
- Marinasco Tunnel: Site investigation plan, geological model and geotechnical characterization
- Nobiallo Tunnel: geological and geotechnical characterization, surveys during construction
- Barghe Tunnel: geotechnical surveys during construction and tunnel excavation classification
- Ronchi Tunnel: geotechnical surveys during construction and tunnel excavation classification
- Monte Covolo Tunnel: geotechnical surveys during construction and tunnel excavation classification
- S. Silvestro e Le Piane Tunnels: Site investigation plan, geological model and geotechnical characterization
- Serena Tunnel: support to construction tender
- Pieve Vergonte hydraulic Tunnel: evaluation of the expected TBM advance rate for construction tender
- Val Viola hydraulic Tunnel: evaluation of the expected TBM advance rate for construction tender
- Bologna – Firenze high-speed railway link: rock slope stabilization design for adits portals
- Vasto Tunnel: geological support during construction, analysis of tunnel failure
- Sanremo underground station: Site investigation plan, geological model and geotechnical characterization
- Tartaguille Tunnel (France): study of the swelling behavior of the rock mass

- **July 1994 to December 1995**

Company: **ISMES** (Research Institute of the Italian Energy Agency).

Position: JUNIOR GEOLOGIST

Projects:

- Bologna-Florence high-speed railway link: in situ and laboratory rock mechanics characterization.
- Val Artogna Hydroelectric project: engineering geological mapping
- Gurzia Dam: site investigation and foundation stability assessment
- Valla Dam: 1994 flood damage assessment
- Research on the geomechanical and geophysical properties of rock and concrete laboratory samples

## PUBLICATIONS

- Battaglia D., Bezzi A., Birindelli F., Rinaldi M., Vettriano E.: *Fluorescent Tracer Tests for detection of dam leakages: the case of the Bumbuna Dam - Sierra Leone*; Engineering Geology, vol. 205 (2016) pg 30-39
- Battaglia D., Strozzi T., Bezzi A.: *Landslide hazard - risk zonation and impact wave analysis at the Bumbuna reservoir – Sierra Leone*; IAEG XII Congress 2014
- Battaglia D., Bezzi A.; *Fluorescent tracers tests for localization of dam leakage zones: the remediation of the Bumbuna Dam – Sierra Leone*; Act ICOLD Symposium 2013
- Francani V., Piccin A., Berra F., Battaglia D., Gattinoni P., Rigamonti I., Rosselli S.; *Carta geologica d'Italy 1:50.000 – Foglio 118 Milano* e relative Note Illustrative
- Battaglia D.; *Ricostruzione storica di siti contaminati attraverso l'analisi di fotografie aeree e carte storiche*; Rivista Siti Contaminati, Febbraio 2004
- Battaglia D.; *Geologi Lombardi, risultato di un'inchiesta dell'Ordine dei Geologi della Lombardia*; Professione Geologo n.16, Marzo 2003
- Battaglia D.; *Polizza sulle catastrofi naturali, aspetti tecnico operativi*; Bollettino della Associazione Italiana Periti Assicurativi, Gennaio 2002 e sulla rivista Assinews Giugno 2002
- Battaglia D.; *Tecniche di indagine, caratterizzazione geotecnica e geomeccanica e classificazioni di rocce e terreni. Applicazioni a problematiche geo-ambientali*; Atti del corso in Tecnologie e Tecniche di Misura in campo geo-ambientale, Associazione Italiana Strumentisti, Febbraio 2000.
- Spalla M.I., Carminati E., Ceriani S., Oliva A., Battaglia D.; *Influence of deformation partitioning and metamorphic equilibration on P-T path reconstruction in the pre -Alpine basement of the Central Southern Alps*; Journal of Metamorphic Geology, n. 3, May 1999.
- Carminati E., Siletto G. B., Battaglia D.; *Thrust kinematics and internal deformation in basement involved folded thrust belts: the Eastern Orobic Alps case*; Tectonics, vol.16, #2, pag. 256-271, April 1997
- Albini S., Battaglia D. et al.; *Alpine deformation and prealpine remnants in the north eastern Orobic Alps, Southalpine basement*; Quaderni di Geodinamica Alpina e Quaternaria, II, 25-39, 1994

Peer reviewer for the Engineering Geology Journal (Elsevier)