MATTEO FACCHINI

PERSONAL INFORMATION

Born in Trento (Italy), February 11, 1988

citizen of Italy

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EDUCATION

Nov 2013-Jan 2018 ETH Zurich – Zurich, Switzerland

PhD

Laboratory of Hydraulics, Hydrology and Glaciology (VAW)
Thesis: *Downstream morphological effects of Sediment Bypass Tunnels*
Description: monitoring and modeling the morphological effects of a sediment bypass tunnel (SBT) on the downstream river reach.
Advisors: Prof. Robert M. Boes & Dr. Annunziato Siviglia

Oct 2010-Nov 2013 Università degli Studi di Trento – Trento, Italy

Master Degree

Environmental and Land Engineering
Thesis: *High order ADER-WENO finite volume schemes for Boussinesq-type equations*
Advisor: Assoc. Prof. Michael Dumbser

Sep 2011-Sep 2012 Technische Univerität Dresden – Dresden, Germany

Erasmus Exchange

Civil and Environmental Engineering

Sep 2007-Oct 2010 Università degli Studi di Trento – Trento, Italy

Bachelor Degree

Environmental Engineering
Thesis: *Aspetti dei deflussi di pioggia: dilavamento di superfici stradali e rischi per i bacini limitrofi*
Advisors: Assoc. Prof. Sandra Dirè & Assoc. Prof. Maurizio Righetti

WORK EXPERIENCE

May 2018-May 2019 Research Fellow, University of Trento – Trento, Italy

UniTN

Modeling of the effects of repeated sediment releases to glacier-fed gravel bed rivers.

Nov 2013-Jan 2018 PhD Candidate, ETH Zurich – Zurich, Switzerland

ETH Zurich

Monitoring and modeling of downstream effects of Sediment Bypass Tunnel (SBT) releases at an alpine stream.

Nov 2013-Oct 2017 Software Developer, ETH Zurich – Zurich, Switzerland

ETH Zurich

Software development of BASEMENT (Basic Simulation Environment for Computation of Environmental Flow and Natural Hazard Simulation), a software used in river engineering and morphodynamics modeling.

Jan-Mar 2013 Faculty Advisor, LEONARDO

Formazione e Sviluppo – Catania, Italy

LEONARDO

Tutoring students going to simulate a session of the United Nations (National Model United Nations, NMUN) in New York.

PUBLICATIONS

2019 M. Facchini, R.M. Boes, D.F. Vetsch, A.Siviglia (2018), Riverbed and surface composition adjustments in a gravel-bed river subject to repeated Sediment Bypass Tunnel operations, under review

2018 M. Facchini, (2018), Downstream morphological effects of Sediment Bypass Tunnels, VAW Mitteilungen 243 (R.M. Boes ed.), ETH Zurich, Switzerland.

2017 M. Facchini, A. Siviglia, R. M. Boes, (2017), Downstream morphological effects of SBT releases: 1D numerical study and preliminary LiDAR data analysis, In Proceedings of the 2^{nd} International Workshop on Sediment Bypass Tunnels (T. Sumi ed.), Kyoto University, Kyoto, Japan.

2016 M. Dumbser, M. Facchini, (2016), A space-time discontinuous Galerkin method for Boussinesq- type equations, Applied Mathematics and Computation, 272(2): 336-346.

2015 M. Facchini, A. Siviglia, R.M. Boes, (2015), Downstream morphological impact of a sediment bypass tunnel – preliminary results and forthcoming actions, Proc. First International Workshop on Sediment Bypass Tunnels, VAW Mitteilungen 232, ETH Zürich, Schweiz, 137-146.

CONFERENCES, COURSES AND SEMINARS:

2018 American Geophysical Union (AGU) Fall Meeting – Washington DC, USA – December 11 - December 15 2018.

Seminar at St. Anthony Falls Laboratory – Minneapolis, USA – December 4 2018.

2017 Second International Workshop on Sediment Bypass Tunnels – Kyoto, Japan – May 9 - May 12, 2017.

2016 Summer School on Fluvial Geomorphology – Losone, Switzerland – June 27 - July 1, 2016.

2015 Introduction to Writing at Doctoral Level, Natural Science & Engineering, C1 level – Zurich, Switzerland – Fall Semester 2015.

International Workshop on Sediment Bypass Tunnels – Zurich, Switzerland – April 27 - April 29, 2015.

2014 European Geoscience Conference General Assembly – Vienna, Austria– April 27- May 2, 2014.

Post-graduate Course on Advanced Numerical Methods for Hyperbolic Equations and Applications – Trento, Italy – February 3 - February 14, 2014.

Post-graduate Course on Basic Interdisciplinary River Morphodynamics: First Edition, River Bars – Trento, Italy – October 27 - October 31, 2014.

LANGUAGE SKILLS

Mother tongue Italian

Other languages English

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
C1	C1	C1	C1	C1

German

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
C1	C1	C1	C1	C1

Communication and social skills

public speaking skills.

didactic skills.

team work orientation.

taking on responsibilities.

Organizational skills

ability of dealing with conflicting priorities and multiple tasks.

working experience in events organization and planning, for medium events (concerts and the Trento Masquerade Ball 2013).

Job-related skills

good experience in the field of river monitoring by means of direct field measurements (GIS data sampling with mobile mapping, grain size distributions, flow speed measurements, topography, etc.) and remote measurements (airborne photogrammetry, 3D laser scanning by means of Laser Imaging Detection and Ranging (LiDAR)).

good knowledge in the field of habitat evaluation and modeling of fluvial systems (MesoHABSIM methodology for morphological units classification).

very good knowledge of Geographic Information Systems (GIS) applied to the evaluation of river topographic changes, i.e. of digital elevation models (DEM) evolution.

very good knowledge of HydroVISH, a software developed by the company AHM (Innsbruck) used to classify clouds of points measured during LiDAR surveys.

perfect knowledge of BASEMENT, a software developed at VAW (ETH Zurich), used for river engineering and morphodynamic modeling.

Technology-related skills

very good knowledge of different operative systems (Macintosh, Windows and Ubuntu) and of their basic applications (e.g. iWork, Microsoft Office and LibreOffice).

excellent knowledge of programming and scripting languages such as Python and Matlab; regular use on a daily basis of GitHub.

good knowledge of programming and scripting languages such as C++, Fortran and R.

basic knowledge of Docker and other softwares used in the engineering and mathematical fields such as Maple, HecRas, Ansys CFX e Comsol Multiphysics.

Artistic skills

Music · percussions degree at the music school "I Minipolifonici" di Trento; several years of concert activity with the orchestra "I Filarmonici" di Trento (classical music), with the orchestras TU-Sinfonieorchester e TU-Kammerphilharmonie of the TU Dresden (classical music), with the marching band Corpo Musicale Città di Trento (classical and folk music) and in local bands (rock, blues, and funky music).

Other skills

board member at the orchestra "I Filarmonici" di Trento until 2013.

board member at the Corpo Musicale Città di Trento until 2013.

member of the artistic board at the Corpo Musicale Città di Trento until 2013.

students delegate at the high school Liceo Scientifico Statale "G. Galilei" di Trento during school years 2005-2006 e 2006-2007.

students delegate in the Department Council at the Department of Civil, Environmental and Mechanical Engineering of the Università degli Studi di Trento during the academic year 2010-2011.

January 3, 2019