



curriculum vitae

PERSONAL INFORMATION

Surname	Giudici
Name	Federico
Address	Via della Mondina 19C, 27036 Mortara (PV), Italy
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Nationality	Italian
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Date of birth	30/12/1991
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Work experience, stages, studies abroad

• Date (from – to)	November 2016 – Ongoing
• Name and address of firm/university	Politecnico di Milano – Dept. of Electronics, Information and Bioengineering, RSE (Ricerca Sistema Energetico)
• Type of business or sector	Water Resources Management
• Type of employment	PhD Candidate
• Main activities and responsibilities	Research activities on water-energy nexus in water supply systems

• Date (from – to)	July 2016 – October 2016
• Name and address of firm/university	Politecnico di Milano – Dept. of Electronics, Information and Bioengineering
• Type of business or sector	Water Resources Management
• Type of employment	Research Fellow
• Main activities and responsibilities	Research activities on European project IMPREX (Improving Predictions and management of hydrological Extremes)

• Date (from – to)	September 2015 – December 2015
• Name and address of firm/university	ETH Zurich, Rämistrasse 101, 8092 Zurich, Switzerland

• Type of business or sector	Hydrology and Water Resources Management Department
• Type of employment	Visiting Student
• Main activities and responsibilities	Master thesis development; Collaboration with the hydrology and water management research group; Weekly meetings to assess the thesis work and to discuss about the possible research developments; Attendance to several seminars on the topics of my thesis project

Education and training

• Date (from – to)	October 2013 – April 2016
• Name and type of organisation providing education and training	Politecnico di Milano, Milano (MI), Italy (University)
Duration of the program of study	2 years
• Principal subjects/occupational skills covered	Natural resources planning and management; Development of strategies for the rational management of natural resources; Advanced environmental systems analysis; Computer science for environmental and land planning engineering; Ecosystem conservation and management; Mitigation of climate change; Mathematical modelling and simulation; Water resources management
• Title of qualification awarded	Master of Science Degree in Environmental and Land Planning Engineering
Final mark obtained	110/110 cum laude

• Date (from – to)	October 2010 – September 2013
• Name and type of organisation providing education and training	Politecnico di Milano, Milano (MI), Italy (University)
Duration of the program of study	3 years
• Principal subjects/occupational skills covered	Mathematical analysis and geometry; Physics; Environmental chemistry; Geology; Hydrology; Modelling and Simulation; Ecology; Computer science; Soil mechanics; Territorial planning; Sustainability of productive systems; Analysis and management of environmental systems
• Title of qualification awarded	Bachelor of Science Degree in Environmental and Land Planning Engineering
Final mark obtained	103/110

• Date (from – to)	September 2005 – July 2010
• Name and type of organisation providing education and training	Istituto di Istruzione Superiore A. Omodeo, Mortara (PV), Italy (High School)
Duration of the program of study	5 years
• Principal subjects/occupational skills covered	Mathematics; Physics; Chemistry; Natural science; History; Philosophy; Arts; Italian; English; Latin
• Title of qualification awarded	High school leaving qualification in scientific studies
Final mark obtained	92/100

Graduation thesis

Title	Advancing reservoir operation description in physically based hydrological models
Language	English
Supervisor	Professor Andrea Castelletti – Department of Electronics, Information and Bioengineering – Politecnico di Milano
Thesis Summary	The evolution of physically based hydrological models in recent years significantly improved our ability to describe and represent the hydrological processes at the basin scale. However, when the modeled system is strongly affected by a human component, which alters the natural water cycle, the performance of these models decrease: in fact they generally describe the human behaviour through simple operating rules, which are not able to fully capture the complexity of

	<p>the operators' decision-making processes. In this thesis we focus on an alpine basin, where the natural hydrological cycle is deeply influenced by the presence of several hydroelectric reservoirs. Our goal is to integrate, within a distributed and physically based hydrological model (Topkapi-ETH), a behavioural model that can accurately describe the decision-making processes of hydroelectric operators. In so doing, we can assess how the level of detail in the description of the human component affects the overall model accuracy. We also want to assess how simple (operating rules based on a "target level") and complex (optimized policies generated via Stochastic Dynamic Programming) reservoirs operating rules are able to represent the system evolution in a changing context: in particular, we focus on changes in socio-economic drivers, considering different energy price scenarios.</p> <p>Simple and complex reservoir operating rules, within physically based hydrological models, are evaluated with a simulation-based approach in terms of reservoir dynamics, hydropower performance and hydrological response.</p>
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Publications and articles submitted

Author(s) and title	D. Anghileri, F. Giudici, A. Castelletti and P. Burlando, Advancing reservoir operation description in physically based hydrological models
Language	English
Publication place	Geophysical Research Abstracts Vol. 18, EGU2016-10097, 2016 EGU General Assembly 2016
Date of publication	April 2016

Certifications

Certifications of language knowledge	Test of English for International Communication (TOEIC), Date: 09/10/2012, Score: 785/990
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Personal skills and competences

Acquired in the course of life and career but not necessarily evidenced by formal certificates and diplomas.

Mother tongue	Italian
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Other language(s)

	English
• reading	good
• writing	good
• speaking	good

Social skills and competences <i>Living and working with other people, in multicultural environments, in positions where communication is important and situations where teamwork is essential (e.g. Culture and sports), etc.</i>	<ul style="list-style-type: none"> - Good interpersonal skills and attitude to work in team acquired during my academic career and my visiting student period at ETH Zurich. - Team-building attitude acquired during team sport activities - Capability to work in a multicultural environment and with international people - I also improved my social skills travelling abroad during my vacations and keeping in touch with people of foreign countries
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Organisational skills and competences <i>E.g. coordination and management of people, projects and budgets; at work, in</i>	<ul style="list-style-type: none"> - High autonomy in activities and target-oriented work capability - Problem solving ability acquired during my master thesis development - Project management skills acquired during my thesis development and in several academic projects
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<p><i>voluntary work (e.g. culture and sports) and at home, etc.</i></p>	<ul style="list-style-type: none"> - Budget management attitude acquired during my stay in Zurich - Coordination and management of people acquired during my experience as pool lifeguard
<p>Technical skills and competences <i>With computers, specific kinds of equipment, machinery, etc.</i></p>	<p>Computer skills:</p> <ul style="list-style-type: none"> - Operating Systems: Microsoft Windows, Linux, Apple Mac OS - Word-processing and Spreadsheet applications: MS Office Suite, Open Office Suite - Database management systems: MySQL - Numerical calculation and statistical analysis: MathWorks Matlab, Octave - Geographic Information Systems: ESRI ArcGis, QGis, SagaGis - Programming Languages: Fortran, C++, Matlab, Octave - Others: Microsoft Visual Studio
<p>Artistic skills and competences <i>Music, writing, drawing etc.</i></p>	<p>Music (Piano Playing)</p>
<p>Other skills and competences <i>Competences not mentioned above.</i></p>	<p>Skiing, swimming</p>
<p>Additional information</p>	<p>CONFERENCES and WORKSHOPS</p> <p>European Geoscience Union General Assembly 2016, 17th – 22th April 2016, Vienna, Austria. Poster contribution: Advancing reservoir operation description in physically based hydrological models</p>