



## Piergiovanni Domenighini

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### ● WORK EXPERIENCE

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09/2019 – CURRENT Perugia, Italy

**ENGINEERING RESEARCHER UNIVERSITÀ DEGLI STUDI DI PERUGIA**

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- coordinate research and research team;
- writing patents, scientific reports, and articles for peer-reviewed scientific journals on renewable energy fields;
- prepare project proposals for national PNRR and European calls for Horizon2020 and LIFE funding programs;
- proofreading for international journals on applied physics and energy fields;
- support for the management of the relationship between the European community and the regional administration for policies on the energy-hydrogen theme.

Research activity in the following fields:

- Innovative techniques for green hydrogen production: photo-sonolysis, or electro/photo/sono-lysis;
- Renewable energy system design: windfarms, photovoltaic and hydrogen energy systems;
- Evacuated Tube Transport ETT technologies, hyperloop systems;
- Acoustics fluid-dynamics, architectural acoustics, auralization processes of non-trivial sound sources in high reverberant rooms;

Consultancy activities for:

- Railroad consulting in hydrogen carrier transition projects (Renova Red S.p.A.);
- Energy consulting for the design of in-shore wind power plants (La Ginestra S.r.l.);
- Consulting for optimization of cogeneration devices for application in extreme locations (Rampini S.p.A.).

01/08/2023 – CURRENT Novedrate, Italy

**PROFESSOR OF INDUSTRIAL LOGISTICS UNIVERSITÀ ECAMPUS**

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In the field of industrial logistics, with a focus on energy systems, balance, and applications, the role involves:

- Delivering engaging lectures, seminars, and workshops tailored to diverse learners.
- Designing relevant course materials and assessments to meet learning objectives.
- Mentoring students through individual support and constructive feedback.
- Contributing to curriculum development and innovative teaching methods.
- Conducting original research, publishing in peer-reviewed journals, and presenting at conferences.
- Guiding student research projects and theses while fostering independent inquiry.
- Participating in departmental committees, enhancing program quality, and strategic planning.
- Establishing community connections for experiential learning and collaborative projects.
- Pursuing continuous professional development in pedagogy and research methodologies.
- Dedicated to creating a dynamic and inclusive learning environment while advancing knowledge within academia

12/2021 – 04/2023 Paris, France

**VISITING PHD RESEARCHER INSTITUT JEAN LE ROND D'ALEMBERT - UPMC - SORBONNE UNIVERSITÉ - CNRS**

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At the Research Center in Mechanics, Acoustics and Energy: research on measurement and auralization techniques to model and individualize sounding waves (up to ultrasounds) in cylindrical vessels for sonochemistry processes.

01/2023 Via Solari, 27 60025 Loreto, Italy

**ENGINEERING LECTOR E-TRAIN SRL**

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In specialized training courses for competent technicians in acoustic and noise engineering (TCA):

- preparation of teaching materials and lectures;

- teaching activities;
- examiner activities.

## ● EDUCATION AND TRAINING

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09/2019 – 06/2023 Perugia, Italy

**PHD IN ENERGY AND SUSTAINABLE DEVELOPMENT** University of Perugia

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**Address** CIRIAF research centre , Via G. Duranti, 67 , 06125, Perugia, Italy | **Website** <http://www.ciriaf.it/> |

**Level in EQF** EQF level 8

08/2012 – 07/2019 Perugia, Italy

**MASTER DEGREE IN BUILDING ENGINEERING** Università degli Studi di Perugia

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**Address** Via G.Duranti, 67, 06125, Perugia, Italy | **Website** <https://www.unipg.it/en/> |

**Field of study** Building and civil engineering | **Final grade** 110/110 | **Level in EQF** EQF level 7 |

**Type of credits** ECTS | **Number of credits** 360

01/2020 – CURRENT Perugia, Italy

**QUALIFIED ENGINEER** Università degli Studi di Perugia

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**Address** Via G.Duranti, 67, 06125, Perugia, Italy | **Website** <https://www.ordineingegneri.bs.it/>

30/09/2022 – CURRENT Loreto, Italy

**CERTIFIED NOISE CONTROL ENGINEER** E-Train srl

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**Address** Via Solari, 27, 60025, Loreto, Italy

10/2006 – 07/2015 Sassari, Italy

**MASTER DEGREE IN ORGAN AND ORGAN MUSIC COMPOSITION** Conservatorio di Musica "L.Canepa" Sassari

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**Address** Via Ospizio Cappuccini, 2, 07100, Sassari, Italy | **Website** <http://www.conservatorio.sassari.it/>

## ● LANGUAGE SKILLS

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Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
<b>ENGLISH</b>	C2	C1	C1	C1	C1
<b>FRENCH</b>	A2	A2	A2	A2	A2
<b>GERMAN</b>	A2	A2	A1	A2	A1

*Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user*

## ● DIGITAL SKILLS

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### Digital Skills - Test Results

 Information and data literacy	<b>ADVANCED</b> Level 6 / 6
 Communication and collaboration	<b>ADVANCED</b> Level 6 / 6

📁 Digital content creation	<b>ADVANCED</b> Level 6 / 6
📁 Safety	<b>ADVANCED</b> Level 5 / 6
📁 Problem solving	<b>ADVANCED</b> Level 6 / 6

Results from *self-assessment* based on *The Digital Competence Framework 2.1*

## My Digital Skills

### Generic

Adobe Suite (Adobe Photoshop, Adobe Illustrator, Adobe Lightroom, Adobe InDesign) | Project Management Tools (Microsoft Planner, Flow, Jira, Asana, Wrike) | Text processing (Word, LaTeX) | Microsoft Office: proficient user of Word, Excel and Powerpoint

### Building and civil engineering

Revit (Architecture & Structure) | AutoCAD (Professional Proficiency) | Vray 3D rendering | Rhinoceros | Sketchup

### Engineering and modelling

MATLAB programming | Good familiarity with MATLAB, Simulink | Autodesk Inventor (Optimal Knowledge) | CATT-Acoustic | ANSYS Mechanical and ANSYS Fluent | Comsol MultiPhysics | Ramsete Acoustic simulation software | DNV WindFarmer

## ADDITIONAL INFORMATION

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### CREATIVE WORKS

2012 – CURRENT

#### Organist

- Concert organist at music festivals in Italy and abroad
- Assistant organist at the Cathedral of San Lorenzo in Perugia from 2013 to 2020
- Organist of the Cappella Musicale delle Basiliche di San Francesco in Assisi from 2020
- Author of transcriptions of organ music published by Doblinger Musikverlag
- Recordings for the Japanese DaVinci label

Links <https://davinci-edition.com/artists/piergiovanni-domenighini/> | <https://www.corosanfrancescoassisi.org/home/team/piergiovanni-domenighini/> | <https://www.piergiovannidomenighini.com> | [https://www.youtube.com/watch?v=4\\_VDt9l1KMk&t=1s](https://www.youtube.com/watch?v=4_VDt9l1KMk&t=1s)

### COMMUNICATION AND INTERPERSONAL SKILLS

**Driving Success through Effective Communication and Collaboration** Experienced in communication through shows, lessons, and conferences, with excellent speech ability. Confident public speaker due to musical activities. Effective in managing and coordinating teams of up to seven people, ensuring they reach personal and team goals. Strong interpersonal skills and ability to inspire collaboration and productivity.

### HONOURS AND AWARDS

09/2019

**PhD fellowship – Inter-university research centre CIRIAF** Topic: Energy and Sustainable Development

02/2023

**Research fellowship – University of Perugia - Engineering Department** European Union's Horizon 2020 research and innovation programme SWS-HEATING (grant agreement No 764025)  
Topic: Analysis and study of materials and energy systems for the built environment and sustainable infrastructure (orig. *"Analisi e studio di materiali e sistemi energetici per il costruito e le infrastrutture sostenibili"* - D.D. n. 3/2023)

14/07/2023

**Research fellowship – University of Perugia - Engineering Department** Topic: "Study and testing of a prototype for hydrogen storage using hydrate clathrates" - (orig. "Studio e sperimentazione di un prototipo per lo stoccaggio di idrogeno mediante clatrati idrati") – Project: "HEHS: High Efficiency Hydrogen Storage" - ID: RSH2B\_000052 CUP: F19J22001830004 – funded by the European Union – Next Generation EU -

Link <https://www.hydrogen-hehs.com/>

## **CERTIFICATES**

01/03/2023 – CURRENT

**Enrollment in the register of Engineers - N° 7022**

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04/2023 – CURRENT

**Enrollment in the National register of Noise Engineers - ENTECA - N°12434**

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## **PUBLICATIONS**

### **Produzione di idrogeno molecolare tramite foto-sonolisi dell'acqua: stato dell'arte nel contesto italiano**

– 2023

Piergiovanni Domenighini, Ferdinando Costantino, Anna Donnadio, Alceo Macchioni, Federico Rossi, Franco Cotana, Conference: XXIII Congresso Nazionale CIRIAF - Sviluppo Sostenibile, Tutela dell'Ambiente e della Salute Umana At: Perugia, 13-14 aprile 2023, Università degli Studi di Perugia

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### **Transition toward net zero emissions - Integration and optimization of renewable energy sources: Solar, hydro, and biomass with the local grid station in central Italy**

– 2023

Eid Gul, Giorgio Baldinelli, Pietro Bartocci, Tariq Shamim, Piergiovanni Domenighini, Franco Cotana, Jinwen Wang, Francesco Fantozzi, Francesco Bianchi, *Renewable Energy*, Volume 207, 2023, Pages 672-686,

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### **Extra-Auditory Effects from Noise Exposure in Schools: Results of Nine Italian Case Studies** – 2023

Cotana, Franco, Francesco Asdrubali, Giulio Arcangeli, Sergio Luzzi, Giampietro Ricci, Lucia Busa, Michele Goretti, Alfonso Antonio Vincenzo Tortorella, Paola Pulella, Piergiovanni Domenighini, and et al. 2023. *Acoustics* 5, no. 1: 216-241.

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### **Experimental subjective and objective analysis of speech intelligibility and acoustic comfort conditions in an unchanged XVII century Italian church**

– 2023

P. Domenighini, E. Belloni, C. Buratti, *Applied Acoustics*, Volume 205, 2023, 109267.

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### **A techno-economic analysis of a solar PV and DC battery storage system for a community energy sharing**

– 2022

Eid Gul, Giorgio Baldinelli, Pietro Bartocci, Francesco Bianchi, Domenighini Piergiovanni, Franco Cotana, Jinwen Wang, *Energy*, Volume 244, Part B, 2022, 123191,

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### **Evaluation of the solar heat gain coefficient of innovative aerogel glazing systems: Experimental campaigns and numerical results**

– 2022

A.R. Hassani, P. Domenighini, E. Belloni, T. Ihara, C. Buratti, *Journal of Building Engineering*, Volume 62, 2022, 105354.

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### **Optical characterization of historical coloured stained glasses in winter gardens and their modelling in daylight availability simulations**

– 2022

V. Costanzo, F. Nocera, G. Evola, C. Buratti, A. Lo Faro, L. Marletta, P. Domenighini, *Solar Energy*, Volume 243, 2022, Pages 22-34.

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