

PERSONAL INFORMATION

Federica Mezzani

PERSONAL STATEMENT

The candidate graduated with honour in Mechanical Engineering in 2011. Her several international experiences include the internship at BMW for her master thesis, research activity at the University of Auckland (NZ), a collaboration within the Virgo project for the gravitational wave discovery. In this context, she was awarded with the Special Breakthrough prize in Fundamental Physics and the Gruber Cosmology prize. During her PhD at Sapienza, University of Rome, she developed the experimental campaign related to her thesis at Technion, Israel Institute of Technology in Haifa. Awarded Doctor in Theoretical and Applied Mechanics at the Faculty of Engineering, Dept. of Mechanical and Aerospace Engineering in 2019, she is currently a post-doc researcher working in the same department on the project "MINOR: new generation demining method", which earned her the L'Oréal-Unesco Foundation prize "For Women In Science" 2019.

WORK EXPERIENCE

April 2020-To date

Member of the Task Force "Donne per il Nuovo Rinascimento"

Department for Equal Opportunities (Presidency of the Council of Ministries)

Goals: analysis of the impact of COVID-19 epidemic on different sectors; promotion of women worker's rights and gender equality (focus on STEM sectors); report editing and plan proposals.

September 2019-To date

Researcher

"Sapienza" University of Rome, Department of Mechanical and Aerospace Engineering, Rome, Italy

Within the project "MINOR: MINe Overall Recognition" (funded by L'Oréal-Unesco prize "For Women In Science" 2019), aimed at the localization of antipersonnel mines through a swarm of autonomous drones, equipped with new generation sensors, the performed activities include: development of machine learning techniques to identify buried antipersonnel mines from GPR data acquisitions, experimental campaign.

March 2014-August 2019

Researcher

"Sapienza" University of Rome, Department of Mechanical and Aerospace Engineering, Rome, Italy

Within the Applied Mechanics group of the department, the activities are mainly focused on the dynamics of unconventional structures, such as elastic metamaterials.

"Sapienza" University of Rome, Physics Department, Rome, Italy

In the context of the research and the successful discovery of Gravitational Waves, main activities were the design, the structural and dynamic analyses and the complete realization of Power and Signal recycling payloads for the Advanced Virgo Interferometer.

March 2018-June 2018

Visiting Researcher

Technion - Israel Institute of Technology, Department of Mechanical Engineering

The activity is devoted to the experimental campaign on a twin-system composed by two identical waveguides, part of the focus of the PhD thesis on elastic metamaterials.

Supervisor: Prof. Izhak Bucher

November 2017

Visiting Researcher

Ecole Centrale Supélec, Laboratoire Mécanique des Sols, Structures et Matériaux (MSSMat)

Title of the project: Granular metamaterials: a novel use of an ancient component in the reduction of noise and vibrations

October 2012-May 2013

Researcher

University of Auckland, New Zealand

Wave propagation through standard materials and porous materials using WFE method (collaboration with Autoneum www.autoneum.com). The candidate is also Teaching Assistant for the Statics and dynamics course

Supervisor: Prof. Brian Mace

September 2016 – June 2018

Project Manager of the Remote Lab project

"Sapienza" University of Rome, Department of Mechanical and Aerospace Engineering, Rome, Italy

- The project consists in the realization of a network of laboratories remotely accessible, for educational purpose. The project involves 6 departments and 12 professors. The labs include a wind gallery, a space debris observatory, a 3D printer, a real-scale reproduction of a suspension system of a formula type vehicle.
- March 2017-June 2017** **Project Engineer within the Secure Platform project**
 "Sapienza" University of Rome, Department of Mechanical and Aerospace Engineering, Rome, Italy
 Technical and scientific support in the development of the on-board systems of rescue vehicles. Attention was focused on the concept design and the development of the operative functions (collaboration with Fincantieri).
- March 2017-May 2017** **Project Engineer within the Prematic project**
 "Sapienza" University of Rome, Department of Mechanical and Aerospace Engineering, Rome, Italy
 In this project (realization of a PRE-analytic automATIC machinery for environmental analyses), activities were focused on the complete design of the line flows
- April 2015-November 2015** **Innovation technology assistant**
 Allianz Global Assistance, Milan, Italy
 Product Engineer and Innovation Technology Consultant within AGA Innovation Lab and Follow Me project.
 Main activities: market analysis, prototyping, process analysis and product launch.
- March 2018-June 2018** **Project Engineer – Visiting student**
 BMW Group Munich, Germany
 Master thesis: Analysis of a MINI convertible local static and dynamic stiffness related to the shock absorber system.
 NVH structural investigations were conducted at BMW labs both on shock absorber systems and on full vehicles to analyse the static and dynamic behaviour of the single component, hence, to improve the NVH and the global performances of a Mini convertible Cooper S.

EDUCATION AND TRAINING

- November 2015-February 2019** **PhD Student in Applied Mechanics** Vote: Excellent
 Sapienza, University of Rome
 The focus of this PhD is the study of elastic Metamaterials in which the long-range interactions, due to magnetic inclusions, redefine the concept of wave propagation in structures.
- February 2015-December 2015** **II Level Master "Inventive Engineering"** Vote: 110 with honour
 Sapienza, University of Rome
 The aim of the program is to train new actors in the development of advanced technology in multidisciplinary content, with a strong aptitude for inventive capacity, the technological development of a new product, to strategies targeted to the protection of intellectual property, market and financial sustainability of the newfound technology.
- January 2009-November 2011** **M. Sc. Mechanical Engineering** Vote: 110 with honour
 Sapienza, University of Rome

PERSONAL SKILLS

Mother tongue
 Other language

Italian

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
C1	C1	C1	C1	B2

English

- Communication skills** I have always had good communication skills improved by experiences as Business Plan reporter for Formula SAE team and a tutor at University of Auckland
- Managerial skills** Good attitude to manage projects and lead teams (Remote Lab project)
 Excellent attitude to work under pressure (Virgo project)

Job-related skills	During my stay at BMW, I demonstrated an excellent attitude towards time management to deliver reports with no delay and to arrange punctually test session run by technicians
Digital skills	Good competence of Microsoft Office tools, Solidworks and Inventor Autodesk, Autocad, Ansys Workbench
Other skills	Fascinated by the automotive world, I had an active role in the Formula SAE team while studying for my degree. I am an eclectic person and I have always been able to manage my studies and job experiences to develop my several interests. My greatest passion is travelling, I like sports, especially those related to a natural environment as climbing, sailing, and hiking. I enjoy attending art exhibitions, ballets, and concerts.
Driving licence	B

ADDITIONAL INFORMATION

Awards	2019 L'Oréal-Unesco Foundation For Women In Science Italia 2017 Avvio alla Ricerca 2016 Special Breakthrough prize in Fundamental Physics 2016 Gruber Cosmology prize
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