





Giulia Matrone – Curriculum Vitae (short version)



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Giulia Matrone was born in Pavia, Italy, in 1985. She received the **BSc and MSc Degrees in Biomedical Engineering**, both *cum laude*, from the University of Pavia in 2006 and 2008, respectively. In 2010 she obtained the Italian professional license as an Engineer. From 2008 to 2011 she was a **PhD student in Bioengineering and Bioinformatics** at the Dept. of Computer and Systems Science, University of Pavia, where she graduated in February 2012.

From 2011 to 2016 she held a post-doctoral research grant, and from 2016 to 2023 she was Assistant Professor (RTD) with the Bioengineering laboratory, Dept. of Electrical, Computer and Biomedical Engineering. She currently is **Associate Professor of Bioengineering (SSD ING-INF/06)** at the Dept. of Electrical, Computer and Biomedical Engineering, University of Pavia.

The research activities of Dr. Matrone are mainly focused on **ultrasound medical imaging**, particularly on the study of novel ultrasound beamforming and image formation techniques able to improve contrast and resolution, also based on artificial intelligence techniques, high frame-rate methods, ultrasound elastography and image processing. For several years she has also been working on system-level analyses for the design of the integrated front-end electronics of 3D/4D ultrasound imaging probes based on CMUT technology. In parallel she has been involved in the development of new **mm-wave imaging systems** for breast cancer detection, focusing on image reconstruction algorithms and on the design of tissue-mimicking phantoms.

She is author/co-author of more than 70 **publications** on international journals and conference proceedings ([link to Scopus](#), [link to Google Scholar](#)), of two book chapters and one editorial.

Dr. Matrone is **Research Unit Leader** in the PRIN 2020 project CONUS “Conic open scanner for ultrasound research advancement” funded by the Italian Ministry of University and Research and coordinated by the University of Florence (2022-2025). She also is **Operative Unit Responsible** of the project “Preoperative identification of the histologically vulnerable plaque using non-invasive imaging, biomechanical assessment and baroreflex evaluation in patients with severe carotid stenosis”, funded by the Italian Ministry of Health, 2018 Targeted Research call, and coordinated by Policlinico San Donato (2020-24). In 2017-2019 she was the **Principal Investigator** of a project funded by the University of Pavia on the basis of a competitive call (Blue Sky Research), on mm-waves, ultrasound and elastography for breast cancer imaging. From 2013 to 2016 she participated in the FP7-ENIAC-JU project “DeNeCoR - Devices for NeuroControl and NeuroRehabilitation” coordinated by Philips Healthcare, where she was involved in the development of a sparse-array CMUT probe for 3D US neuronavigation guided by MRI.

In 2018 she has been recipient of the FFABR grant from the Italian Ministry of Education, University, and Research. In 2009 she won the Italian National Bioengineering Group (GNB) **award**, and the award in memory of prof. Domenico Dotti from the University of Pavia, both for her Master thesis project. In 2008 and 2010 she won the 2nd place prize at the “Innovate Italy – Altera Design Contest” on FPGA programming.

Since A.Y. 2017/18 she has been teaching “**Biomedical Instrumentation LM**”, Master’s Degree in Bioengineering, and “**Biomedical Signal and Image processing**”, Bachelor’s Degree in Bioengineering, at the University of Pavia. Since A.Y. 2021/22 she also holds the course of “**Bioimages**”, Faculty of Medicine and Surgery (MEET program). In A.Y. 2016/17 she taught “**Biological Signal Processing**”, Bachelor’s Degree in Sport and Exercise Sciences at the University of Pavia.

She currently is **member of the Board of the PhD Program** in Bioengineering, Bioinformatics and Health Technologies, University of Pavia, and of the Italian National PhD Program in Artificial Intelligence (Health and life science area).

Dr. Matrone was **Associate Editor** for the journal *IEEE Access* from 2019 to 2022. She was Guest Editor of the Special Issues “3D Medical Ultrasound: Imaging and Hardware” (2020/21) and “Ultrasound B-mode Imaging: beamforming and image formation techniques” (2017/18) of the journal Applied Sciences (MDPI). She also serves as a reviewer for several journals and conferences in the fields of ultrasound imaging and bioengineering. She has been **member of the Technical Program Committee of the IEEE International Ultrasonics Symposium** (Group 1, Medical Ultrasonics) since 2020.

She is member of the IEEE Ultrasonics, Ferroelectrics, and Frequency Control Society, of the IEEE Engineering in Medicine and Biology Society, and of the Italian National Bioengineering Group (GNB).