

Abstract

The field of soft robotics experienced substantial growth in the last 10 years and has attracted significant attention from the science and technology community due to its potential in overcoming some of the most stringent limitations of traditional robotic devices. In this talk, Dr. Renda will start with an overview of the soft robotics field by illustrating some of the most significant results achieved so far and their applications.

Then, he will briefly introduce the work done at the soft robotics lab of Khalifa University, highlighting the challenges and opportunities within the field. Along the way, he will touch upon several prominent concepts in soft robotics, from bioinspired design principles down to advanced geometric mechanics topics.

Speakers Bio



Dr. Federico Renda is an Assistant Professor in the Department of Mechanical Engineering at Khalifa University in Abu Dhabi, UAE. Before joining Khalifa University, he was a Postdoctoral Fellow at the BioRobotics Institute of Scuola Superiore Sant'Anna, where he received his PhD degree in 2014. Dr. Renda joined the LS2N lab at IMT Atlantique and the DEFROST Lab at INRIA as a Visiting Professor in 2018

and 2019. He currently serves as Associate Editor in the Soft Robotics and IEEE Robotics and Automation Letters journals. His research interests include dynamic modeling and control of soft and underwater robots using principles of geometric mechanics. Dr. Renda is also a member of the Institute of Electrical and Electronics Engineers (IEEE)