Workshop: Soft Robots and Wearables for Flexible and Interactive Automation

Venue and time:

Sunday 1 September 2024 at 10:00, The Nicolaus Hotel, Bari (Italy). **ROOM T9, 2nd floor.**
Part of IEEE CASE 2024, Bari (IT) https://2024.ieeecase.org

Goal:

The goal of this workshop is to create a connection between researchers working on Soft Robotics and Wearable technologies and the Automation community.

Organizers:

- Vito Cacucciolo, Associate Professor, Politecnico di Bari (Italy) and CEO Omnigrasp SRL (Italy).
- Francesco Giorgio-Serchi, Associate Professor, The University of Edinburgh (UK).
- Federico Renda, Associate Professor, Khalifa University (UAE).
- Shingo Maeda, Full Professor, Tokyo Institute of Technology (Japan).

Abstract:

This workshop unites researchers in Soft Robotics, Wearable technologies, and Automation to explore the potential of interactive, flexible soft robotic components. These components hold the key to transitioning hardware automation from structured manufacturing environments to dynamic, human-populated settings where the automation needs can continuously change. We'll discuss use cases ranging from soft grippers and exoskeletons to collaborative manipulators and robots designed for environmental interaction. AI technologies and their synergic use with flexible-reconfigurable hardware will also be covered.

Program:

TIME	**SPEAKER**	**TOPIC**
10:00	The organizers	Opening
10:30	Vito Cacucciolo, Politecnico di Bari (IT)	Soft actuators and soft grippers for flexible automation
11:00	Shingo Maeda, Tokyo Institute of Technology (JP)	Self-motion of soft materials
11:30	Coffee break	

12:00	Monica Malvezzi, Università di Siena (IT)	Modeling, designing, and prototyping compliant robotic grippers and fingers for grasping and manipulating tasks in unstructured environments
12:30	Francesco Ferro, PAL Robotics (ES)	TBA
13:00	Linda Napoletano, Deep Blue (IT)	Human Automation Teaming
13:30	Lunch	
14:30	Lucia Beccai, Istituto Italiano di Tecnologia (IT)	Tactile sensing, actuation and gripping enabled by 3D printing of porous elastic structures
15:00	Yunjie Yang, Edinburgh University (UK)	Flexible tomography and machine learning for soft robotic perception
15:30	Naoki Hosoya, Shibaura Institute of Technology (JP)	Soft sensors and actuators for prospective agriculture
16:00	Coffee break	
16:30	Early career scientists session	
16:30	Hiroki Shigemune, Shibaura Institute of Technology (JP)	Origami based soft robotics technologies contributing to Society 5.0
16:45	Daniele Caradonna, Scuola Superiore Sant'Anna (IT)	Exploiting the Snap Effect of Soft Arms for Pick-and-Place Tasks
17:00	Simone De Carolis, Politecnico di Bari (IT)	Sensing in electroactive soft grippers
17:15	The organizers	Closing remarks

Registration:

All the speakers and attendees need to register.

Registration for the workshops only is € 60 and can be done from the conference website https://2024.ieeecase.org/registration/

Registration is also available in person starting at 09:00 on floor -1 of the Nicolaus Hotel.

Workshop registration is included in the general IEEE CASE 2024 conference registration.