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UNIVERSITÀ DEGLI STUDI DI NAPOLI FEDERICO II

MISSIONE 4 COMPONENTE 2 INVESTIMENTO 3.1 – FONDO PER LA REALIZZAZIONE DI UN SISTEMA INTEGRATO DI INFRASTRUTTURE DI RICERCA E INNOVAZIONE – AVVISO N. 3264 DEL 28 DICEMBRE 2021

PROGETTO BRIEF - BIOROBOTICS RESEARCH AND INNOVATION ENGINEERING FACILITIES STRENGTHENING OF AN EXISTING RI AMONG THOSE LISTED IN NPRI WITH HIGH PRIORITY CUP: J13C22000400007

PHD PROGRAM IN INFORMATION AND TECHNOLOGY FOR HEALTH
PHD PROGRAM IN INFORMATION TECHNOLOGY AND ELECTRICAL ENGINEERING

Seminar announcement

Monday 19th January 2026, Time: 13:30 - 15:30 (0,4 CFU)
Aula CSIF Giardino, DIETI – Piazzale Tecchio, 80 - NAPOLI

Dr. Shifa Sulaiman

Post-doc Advanced Robotics & AI

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"Design of a tendon driven wrist section for a prosthetic hand"

Abstract: Soft continuum mechanisms have become essential in modern robotics for enabling highly dexterous and adaptive motion. Yet, many existing designs struggle to maintain structural integrity or support meaningful payloads during dynamic operation. In this seminar, I will present the development of a new soft robotic wrist section designed for the prosthetic platform *PRISMA Hand II*. The talk will walk through the complete design and development pipeline from mechanical architecture and material selection to fabrication and modelling strategies. The wrist structure is built using an optimized arrangement of springs, discs, and tendons, with geometric parameters refined through static structural analysis to ensure both flexibility and load-bearing capability. I will also discuss the modelling framework and demonstrate experimental results from the fabricated prototype, highlighting its ability to execute controlled motions and maintain stable postures under load. This seminar aims to provide insights into creating soft continuum mechanisms that balance compliance with functional strength, advancing their use in prosthetics and other robotic applications.

Lecturer short bio: Shifa Sulaiman is a robotics researcher specializing in mobile manipulation, soft robotics, and intelligent control systems. She is currently a Postdoctoral Researcher in the Department of Electronics Systems at Aalborg University, Denmark where she develops path-planning, trajectory-planning, and vision-based control strategies for autonomous mobile manipulators., mobile manipulation in hospital environments, and assistive exoskeleton design. Her broader project portfolio spans continuum robotics, quadruped locomotion, grasp planning, and industrial robot motion optimization.

The seminar will take place on January 19, 2026, at the Aula CSIF Giardino, Piazzale Tecchio 80, Naples, with the option to attend remotely via MS Teams: ***https://teams.microsoft.com/l/meetup-join/19%3aygXvTa1ZGtSEMsQVd9IOOCdyPe7_p4jOFK7G7QZzjwU1%40thread.tacv2/1768303399358?context=%7b%22Tid%22%3a%222fcfe26a-bb62-46b0-b1e3-28f9da0c45fd%22%2c%22Oid%22%3a%22175ed07e-f9f4-4480-815c-4c0f14e81d68%22%7d***

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