

Colloqui della Classe di Scienze

Anno Accademico 2021/2022

Scuola Normale Superiore
Piazza dei Cavalieri, 7 - PISA

23 MARZO 2022
ore 15.00

SILVESTRO MICERA

The BioRobotics Institute and Department of Excellence in Robotics and AI, Scuola Superiore Sant'Anna, Pisa, Bertarelli Foundation Chair in Translational Neuroengineering, Engineering Ecole Polytechnique Federale de Lausanne (EPFL)

Intraneural neuroprostheses to understand and restore sensory, motor, and autonomic neural functions

ABSTRACT:

Neuroengineering is a novel discipline combining engineering including micro and nanotechnology, electrical and mechanical, and computer science with cellular, molecular, cognitive neuroscience with two main goals: (i) increase our basic knowledge of how the nervous system works; (ii) develop systems able to restore functions in people affected by different types of neural disability. In the past years, several breakthroughs have been reached by neuroengineers in particular on the development of neurotechnologies able to restore sensorimotor functions in disabled people. In this presentation, I will provide several examples on how implantable interfaces can be used to restore sensory (tactile feedback for hand prostheses, vision), motor (grasping, locomotion), and autonomic functions (for type 2 diabetes and cardiovascular problems) and how they can be used also to understand cognitive functions such as language and decision making.