MECHANICAL ENGINEERING SEMINAR

"Wearable robotics for a sustainable ageing"

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MECE & Technology and Medicine seminar series.

Abstract: Ageing population affects society welfare sustainability. The ageing of the population is one of the most critical challenges current industrialized societies will have to face in the next years, and threatens the sustainability of our social welfare. In 40 years from now, nearly 35% of the European population will be older than 60, hence the urgency to provide solutions enabling our ageing society to remain active, creative, productive, and – above all – independent. Among many diseases, gait disorders and upper-limb impairment are common and often devastating companions of ageing, leading to reductions in quality of life and increased mortality.
In the next years, ageing-related upper- and lower-limb impairment and disability will lead to a tremendous increase of the number of people needing assistance in their fundamental activities of daily living. In this scenario, people will become increasingly reliant on technology to meet their own needs to live active, fulfilling, and independent lives. Wearable robotics can be an enabling technology for establishing a sustainable welfare.
This presentation will introduce the results achieved by the team of wearable robotics of the BioRobotics Institute of Scuola Superiore Sant'Anna in the last years. In particular, the following devices will be presented: the NEUROExos elbow powered exoskeleton, the hand exoskeleton HANDEXOS, the sensorized foot insoles, and the pelvis orthosis developed within the framework of the CYBERLEGs project.

Bio: Nicola Vitiello received the M.Sc. degree in biomedical engineering (cum laude) from the University of Pisa, Italy, in 2006, and from Scuola Superiore Sant'Anna, Pisa, Italy, in 2007. He also received the Ph.D. degree in biorobotics from the Scuola Superiore Sant'Anna, Pisa, Italy, in 2010. He is currently an Assistant Professor with The BioRobotics Institute, Scuola Superiore Sant'Anna. He is the author or co-author of 30 ISI/Scopus papers and 30 peer-review conference proceedings papers. He has served as the Scientific Secretary of the EU FP7 CA-RoboCom project, and he is currently the Project manager of the EU FP7 CYBERLEGs Project. His main research interests include the development of wearable robotic devices for human motion assistance and rehabilitation and of robotic platforms for neuroscientific investigations.on Power Electronics.

Friday, November 7th, 2014
11:00 am Seminar in 233 Mudd
Lunch served at 12:00pm
in MECE Lobby