

Titles of the courses: Neurorobotics I/II/III (3 CFU per module)

Neuro-robotics I: *developing mechatronic systems for neuroscientific measurements and analyses*

Neuro-robotics II: *modeling neuroscientific phenomena and behaviors*

Neuro-robotics III: *developing hybrid- bionic systems*

Prof. Maria Chiara Carrozza

Assistant to the course: Dr. Calogero Maria Oddo

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Schedule and topics of lectures and invited seminars in Academic Year 2011/2012

Date	Topic
October 10, 2011	Class lectures Maria Chiara Carrozza <i>Scuola Superiore Sant'Anna, Pisa</i> The neuro-robotics design paradigm and methods
November 22, 2011	Invited lecture Georges Debrégeas <i>Ecole Normale Supérieure, Paris</i> Tactile perception: sensing a surface through a frictional joint
November 22, 2011	Invited lecture Juergen Schmidhuber <i>Dalle Molle Institute for Artificial Intelligence, Lugano</i> Neural Network ReNNaissance & Formal Theory of Fun
December 7, 2011	Class lectures Maria Chiara Carrozza <i>Scuola Superiore Sant'Anna, Pisa</i> The neuro-robotics design paradigm and methods
December 7, 2011	Invited lecture Angelo Arleo <i>University Pierre & Marie Curie, Paris</i> Spatiotemporal decoding of first- and second-order tactile afferents
December 20, 2011	Neuro-robotics I case-study lecture Calogero M. Oddo <i>Scuola Superiore Sant'Anna, Pisa</i> A mechatronic tactile stimulation platform for neuroscientific studies

Date	Topic
January 20, 2012	<p>Invited lecture</p> <p>Tony Prescott <i>The University of Sheffield, Sheffield</i></p> <p>Biomimetic robotics with a light touch</p>
February 10, 2012	<p>Invited lecture</p> <p>Mathew Diamond <i>International School for Advanced Studies (SISSA), Trieste</i></p> <p>Stages of processing for building tactile perception in the rat whisker system</p>
February 10, 2012	<p>Neuro-robotics II case-study lecture</p> <p>Calogero M. Oddo <i>Scuola Superiore Sant'Anna, Pisa</i></p> <p>Soft and neuromorphic biomimetic artificial touch: a mean to explore neuroscientific hypotheses on the human somatosensory system</p>
February 21, 2012	<p>Invited lecture</p> <p>Aaron Dollar <i>Yale School of Engineering & Applied Sciences, New Haven</i></p> <p>The Hand 1: Evolution and Advantages</p>
February 24, 2012	<p>Invited lecture</p> <p>Kianoush Nazarpour <i>Newcastle University</i></p> <p>Motor learning explored with myoelectric and neural interfaces</p>
March 13, 2012	<p>Invited lecture</p> <p>Niels Birbaumer <i>Eberhard-Karls Tuebingen University, Tuebingen</i></p> <p>Brain Computer Interfaces (BCI) in paralysis and psychological disorders</p>
June 8, 2012	<p>Invited lecture</p> <p>Aaron Dollar <i>Yale School of Engineering & Applied Sciences, New Haven</i></p> <p>The Hand 2: Neural Control and Daily Use</p>

Date	Topic
July 5, 2012	<p>Invited lecture</p> <p>Aaron Dollar <i>Yale School of Engineering & Applied Sciences, New Haven</i></p> <p>The Hand 3: Mechanical Hand Design – Good Performance via Passive Adaptability</p>
July 17, 2012	<p>Invited lecture</p> <p>Aaron Dollar <i>Yale School of Engineering & Applied Sciences, New Haven</i></p> <p>An Overview of the US Academic System and Basic Research Funding</p>