


## PERSONAL INFORMATION

Valerio Modugno

 modugno@dis.uniroma1.it

Sex Male | Nationality Italian

## CURRENT POSITION

From Sep 2017

**Postdoctoral Research Fellow**

Sapienza University of Rome

**Fields of Research** : Robotics, Control Theory, Machine Learning

## EDUCATION

Nov 2013 – Sep 2017

**Ph.D in ABRO (Automatica, Bioingegneria e Ricerca Operativa)**

Sapienza University of Rome

**Thesis** : Learning Safe controller for Motion Generation in Redundant Robot**Principal Subjects** : Robotics, Control Theory, Machine Learning, Stochastic Black Box Optimization, Whole Body Control for Humanoids

Apr 2015 – Dec 2016

**Visiting Researcher at Larsen, INRIA Grand-Est Nancy****Local Supervisor**: Researcher Serena Ivaldi

Sep 2014 – Mar 2015

**Visiting Researcher at Intelligent Autonomous System group, TU Darmstadt****Local Supervisor**: Researcher Serena Ivaldi

Mar 2009 – Oct 2013

**Master Degree in Control Engineering**

110/110 cum laude

Sapienza University of Rome

**Thesis** : A Stochastic Learning Approach for Vision Based Grasping**Principal Subjects** : non Linear System, Control Theory for Linear and non Linear System , Optimal Control, Adaptive and Robust Control, Robotics , Computer Vision, Machine Learning.**Projects** : implementation of a visual egomotion system for monocular camera  
implementation of a visual based tracking system of mobile robots  
implementation of a system for Structure from Motion  
implementation of automatic trading system through Granular Computing technique

Set 2011 – Mar 2012

**LED (Luiss Entrepreneurship for Development)**

Luiss Business School

**Principal Subjects** : General management, Business Planning, Business Modelling, Business Financing

Set 2005 – Mar 2009

**Bachelor Degree in Control Engineering**

110/110 cum laude

Sapienza University of Rome

**Thesis** : Motion Planning for Redundant Robot with Assigned End-Effector Path**Principal Subjects** : Linear System, Base Control Theory, Operating System, Robotics,

## ACADEMIA INFORMATION

### Publications

#### IROS 2020

- *Model Predictive Control for a Tendon-Driven Surgical Robot with Safety Constraints in Kinematics and Dynamics*, F. Cursi, V. Modugno, P. Kormushev

#### IFAC 2020

- *Enforcing Constraints over Learned Policies via Nonlinear MPC: Application to the Pendubot*, G. Turrisi, B. Barros Carlos, M. Cefalo, V. Modugno, L. Lanari, G. Oriolo

#### RAL 2020

- *Learning Robust Task Priorities and Gains for Control of Redundant Robots*, L. Penco, E. Mingo Hoffman, V. Modugno, W. Gomes, J.B. Mouret, S. Ivaldi

#### ICRA 2020

- *ZMP constraint restriction for robust gait generation in humanoids*, F.M. Smaldone, N. Scianca, V. Modugno, L. Lanari, G Oriolo

#### RAM 2019

- *A Multimode Teleoperation Framework for Humanoid Loco-Manipulation: A Demonstration Using the iCub Robot*, L. Penco, N. Scianca, V. Modugno, L. Lanari, G. Oriolo, S. Ivaldi

#### CORL 2019

- *An Online Learning Procedure for Feedback Linearization Control without Torque Measurements*, M. Capotondi, G. Turrisi, C. Gaz, V. Modugno, G. Oriolo, A. De Luca

#### HUMANOIDS 2019

- *Humanoid Whole-Body Movement Optimization from Retargeted Human Motions*, W. Gomes, V. Radhakrishnan, L. Penco, V. Modugno, J.B. Mouret, S. Ivaldi
- *Gait Generation using Intrinsically Stable MPC in the Presence of Persistent Disturbances*, F. M. Smaldone, N. Scianca, V. Modugno, L. Lanari, G. Oriolo

#### HUMANOIDS 2018

- *Robust Real-time Whole-Body Motion Retargeting from Human to Humanoid*, L. Penco, B. Clement, V. Modugno, E. Mingo Hoffman, G. Nava, D. Pucci, Nikos G. Tsagarakis, J.-B. Mouret, S. Ivaldi
- *Learning robust task priorities of QP-based whole-body torque-controllers*, Marie Charbonneau, Valerio Modugno, Francesco Nori, Giuseppe Oriolo, Daniele Pucci, Serena Ivaldi

#### HUMANOIDS 2017

- *Safe trajectory optimization for whole-body motion of humanoids*, V. Modugno, G. Nava, D. Pucci, F. Nori, G. Oriolo, S. Ivaldi
- *Gait generation via intrinsically stable MPC for a multi-mass humanoid model*, N. Scianca, V. Modugno, L. Lanari, G. Oriolo

#### HUMANOIDS 2016

- *Learning Soft Task Priorities for Safe Control of Humanoid Robots with Constrained Stochastic Optimization*, V. Modugno, U. Chervet, G. Oriolo, S. Ivaldi

#### ICRA 2016

- *Learning soft task priorities for control of redundant robots*, V. Modugno, G. Neumann, E. Rueckert, G. Oriolo, J. Peters, S. Ivaldi

#### IJCCI 2014

- *Combining Piecewise Linear Regression and a Granular Computing Framework for Financial Time Series Classification*, V. Modugno, F. Possemato, A. Rizzi
- *Information Granules Filtering for Inexact Sequential Pattern Mining by Evolutionary Computation*, E. Maiorino, F. Possemato, V. Modugno, A. Rizzi

Book chapter

**Social Robotics 2016**

- *One-Shot Evaluation of the Control Interface of a Robotic Arm by Non-experts In book Social Robotics*, S. Marichal , A. Malaisé , V. Modugno , O. Dermy , F. Charpillat , S. Ivaldi

**Computational Intelligence 2016**

- *Noise Sensitivity of an Information Granules Filtering Procedure by Genetic Optimization for Inexact Sequential Pattern Mining*, E. Maiorino, F. Possemato, V. Modugno, A. Rizzi

Summer School

*Regularization Method for Machine Learning* by IIT, Genova 30 Jun - 4 Jul 2014  
*Online Learning Summer School* by Copenhagen University, Copenhagen 28 Jun 2015 - 2 Jul 2015

WORK EXPERIENCE



Jul 2011 – Mar 2012

Cofounder of no Profit Organization “Giovani Roma 2020”

Mar 2009 – Aug 2009

Website developer for UTRI (now Finmeccanica Group)

PERSONAL SKILLS



Mother tongue

Italian

Other language

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1

Computer skills / Technical skill

Deep knowledge of Kinova Jaco arm  
 Good knowledge of Kuka IIWA arm  
 Programming Language: C, C++, python, java, Matlab scripting, R scripting, PHP  
 Simulator: OpenRAVE, Gazebo  
 Library: OpenCV, GSL, CVD, R library, OpenGL, Intel SSD, Intel TBB, PCL.  
 good knowledge of markup languages and stylesheet  
 good knowledge of Office Framework and Latex  
 good knowledge of CMS (Drupal, Joomla)  
 good knowledge of Net Protocols  
 good knowledge of Microcontroller Programming  
 Operating System: Linux (different distribution), Windows and iOS

Communication skills

Good communication and group interaction skills. Good teaching skill.

Organisational / managerial skills

Good flexibility and adaptability. Good ability to manage project, acquired by supervising master student projects.

Driving licence

B

