Gennaro Raiola

Curriculum Vitae

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Education

01/2017- current	*Post-Doc* at ADVR-DLS, Istituto Italiano di Tecnologia (IIT), Genova, Italy. 🌐 <u>www</u>.
03/2017- 07/2017	*Post-Doc* at Robotics and Mechatronics group, University of Twente, Enschede, The Netherlands. 🌐 <u>www</u>.
2016-2017	*Ph.D. student in Robotics* at CEA-List (French Alternative Energies and Atomic Energy Commission), Gif-sur-Yvette, France. 🌐 <u>www</u>.
2014-2015	*Ph.D. student in Robotics* at INRIA - Flowers / ENSTA-ParisTech, Palaiseau, France. 🌐 <u>www</u>.
2010-2012	*Master's Degree (M.Sc) with honor in Automation and Control Engineering* given by the University of Naples "Federico II", Naples, Italy.
2006-2010	*Bachelor's Degree (B.Sc) in Computer Engineering* given by the University of Naples "Federico II", Naples, Italy.

Profession

2012-2013	*Research Engineer in Motion Control of Humanoid Robots* at PAL Robotics S.L., Barcelona, Spain. 🌐 <u>www</u>.

Research

Post-doc	Energy based control strategies for collaborative robots <u>Keywords</u>: Safety in robotics, Impedance Control, Collaborative robotics.
Ph.D. Thesis	"Co-manipulation with a library of Virtual Guides" <u>Supervisors</u>: Prof. Freek Stulp (ENSTA-ParisTech), Dr. Xavier Lamy (CEA-List). <u>Keywords</u>: Collaborative robotics, Industrial applications, Controls, Machine Learning.

M.Sc. Thesis	"Learning Parameterized Skills through Models with Expanded Kernels"
	<u>Supervisors</u>: Prof. Bruno Siciliano (PRISMA lab.) and Prof. Freek Stulp (ENSTA-ParisTech).
	<u>Keywords</u>: Motion Primitives, Machine Learning.

Technical Skills and Software projects

Technical Skills

Programming	C/C++, Python, MATLAB, ROS, Orocos, Qt, Boost, RTAI/Xenomai, Eigen, php (Basics)
Systems/Tools	Linux/Ubuntu, CMake, Latex, QtCreator, Gazebo, Eclipse, git, svn, Virtual-Box, Docker (Basics), EtherCAT (Basics)
Hardware	Arduino

Software projects

Software	"ros-control"
	Ros packages to make controllers generic to all robots.
Software	"virtual-fixtures"
	Library of virtual guides for co-manipulation.
Software	"mekabot"
	Meka robot packages.
Software	"m3ros-control"
	C++ bridge to integrate the control layer of the Meka robot into a ROS environment.
Software	"DmpBbo"
	C++ framework for motion primitives and black-box optimization.
Software	"Stack-of-Task"
	Integration of the stack of tasks inverse kinematics solver on the Reem-H and Reem-C robots at PAL Robotics.

Publications

2017	**Gennaro Raiola**, Carlos Cardenas Alberto, Tadele Shiferaw Tadele, Theo De Vries, Stefano Stramigioli.
	"Development of a Safety-Aware Intrinsically Passive Controller for Collaborative Robots ".
	Under review in *IEEE Robotics and Automation Letters*.
2017	**Gennaro Raiola**, Susana Sanchez Restrepo, Pauline Chevalier, et al.
	"Co-manipulation with a Library of Virtual Guiding Fixtures".
	In *Autonomous Robots, Special Issue on Learning for Human-Robot Collaboration*.

2017	Pauline Chevalier, **Gennaro Raiola**, Brice Isableu, Jean-Claude Martin, Christophe Bazile and Adriana Tapus. "Do Sensory Preferences of Children with Autism Impact an Imitation Task with a Robot?". In *Conference on Human-Robot Interaction (HRI)*.
2017	Susana Sanchez Restrepo, **Gennaro Raiola**, Pauline Chevalier, Xavier Lamy, and Daniel Sidobre. "Iterative Virtual Guides Programming for Human-Robot Comanipulation". In *IEEE International Conference on Advanced Intelligent Mechatronics (AIM)*.
2015	**Gennaro Raiola**, Xavier Lamy, and Freek Stulp. "Co-manipulation with Multiple Probabilistic Virtual Guides". 🗋 In *International Conference on Intelligent Robots and Systems (IROS)*.
2015	**Gennaro Raiola**, Pedro Rodriguez-Ayerbe, Xavier Lamy, Sami Tliba, and Freek Stulp. "Parallel Guiding Virtual Fixtures: Control and Stability". 🗋 In *IEEE Multi-Conference on Systems and Control (MSC)*.
2014	Freek Stulp, Laura Herlant, Antoine Hoarau, and **Gennaro Raiola**. "Simultaneous On-line Discovery and Improvement of Robotic Skill". 🗋 In *International Conference on Intelligent Robots and Systems (IROS)*.
2013	Freek Stulp, **Gennaro Raiola**, Antoine Hoarau, Serena Ivaldi, and Olivier Sigaud. "Learning Compact Parameterized Skills with a Single Regression". 🗋 In *IEEE-RAS International Conference on Humanoid Robots*.

Service

Open-source	Maintainer of ros-control packages.
Research	Reviewer for international conferences and journals: ○ Autonomous Robots (Springer). ○ The International Conference on Robotics and Automation (ICRA). ○ IEEE-RAS International Conference on Humanoid Robots. ○ International Conference on Intelligent Robots and Systems (IROS).

Languages

italian	native proficiency
english	professional working proficiency
french	limited working proficiency