

# ALESSANDRO RONCONE, Ph.D.

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## PERSONAL SUMMARY

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Energetic and resourceful Robotics Engineer with more than five years research experience and a proven publication track record. Motivated by intellectually challenging projects as well as personal achievements, I like to learn new things by stimulating myself with new goals. I am capable of pursuing individual research aimed at the development of novel applications, but I particularly love to be part of a team with bright people working toward ambitious ideas. I am enthusiastic toward the design and the realization of highly innovative tasks, and I love to work hard in pursuance of them.

## SKILLS

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### PERSONAL AND SELF-MANAGEMENT SKILLS

- Strongly self motivated, i.e. able to be not only motivated by external rewards, but by an inner drive to accomplish and perform (at any level). This competence has been useful also in other fields, e.g. sport (see below).
- Fast and avid learner, enthusiastic toward the development of technologically challenging projects in the Robotics/Artificial Intelligence/Computer Science fields.
- Able to carry out well-executed engineering projects with an eye to clean, scalable code deployment and making things - really - work.
- Pragmatic: able to look at problems and solve them in the most logical way possible.

### COMMUNICATION SKILLS

- Strong presentation/communication skills thanks to experience in giving both technical and non-technical talks to both small and big groups, tailoring to the audience. Presented to major international robotics conferences, as well as several outreach events, ranging from exhibitions and fairs, to live TV shows and various interviews.
- Confident in writing technical reports as well as scientific papers. Authored and co-authored numerous international peer-reviewed scientific articles and journals. Some experience with research grant writing.
- Experienced in carrying out well designed and well balanced reports and presentations thanks to noteworthy experience in graphical design (see below).

### INTERPERSONAL AND TEAMWORK SKILLS

- Demonstrated ability to work both independently and in team settings.
- Able to *value input from others* even if it comes from people who are reporting to me.
- Able to understand what *motivates* the people I am working with, and to leverage on their strengths and weaknesses in order to optimally distribute the amount of work a complex project is composed of.
- Able to *delegate*: something assigned to everyone is assigned to no one.
- Supervised and trained technicians, Ph.D. students, and postdoctoral researchers, adapting to various scientific levels and backgrounds.

### TECHNICAL SKILLS

- **5+ years** research experience in the development of one of the most advanced robotic platforms out there, i.e. the *iCub*, a state-of-the-art, 53-DoF humanoid robot with a variety of sensors on board (camera, force sensors, tactile sensors). Main focus in perception, kinematics, calibration, multisensory integration, tactile sensing and computer vision.
- Considerable background in employing optimization techniques in real-world robotic applications. Some experience with control theory.
- Developer of dozens of software modules for the *iCub* project - some of them available at [www.github.com/alecive](http://www.github.com/alecive) and [www.github.com/robotology](http://www.github.com/robotology). Familiar with the implementation and maintenance of cross-platform software for Linux, Windows, OSX (*CMake*). Comfortable with different versioning systems (*cvs*, *svn*, *git*).
- Extensive knowledge in C++, Matlab/R, IPOPT, OpenCV, Bash, HTML5, CSS.
- Extended competence in the usage of the YARP middleware. Some experience with the ROS middleware.

■ Interested in robotics, sensor data, calibration, kinematics, computer vision, tactile sensing, stereo vision, sensor fusion, machine learning.

■ Developer of two Android apps: FlatWoken free version (~5000 downloads) + paid version (~500 downloads)

## ADDITIONAL SKILLS

■ Long-time Linux user with deep knowledge of the Linux/UNIX OS, and active contributor of the Linux FOSS community.

■ Experienced graphic artist and freelancer. Design is problem solving, no different from engineering: design skills are advantageous for many engineering-related situations.

■ Developer of two well known iconsets (AwOken and FlatWoken), themes for the GNOME Desktop Environment, and a number of websites. Commissioned with various design projects from a number of companies.

■ Semi-professional runner (marathons and half-marathons, preferable 10-15k, occasionally mountain races): strengthened self-reliance and self-motivation, as well as ability to push until a project is done.

■ Captain of a local water polo team during high school: developed teamwork and communication skills.

■ Languages: **Italian** (native speaker), **English** (fluent written and oral skills).

## RELEVANT EXPERIENCE

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### 2015-present - POSTDOC - YALE UNIVERSITY - SOCIAL ROBOTICS LAB, NEW HAVEN, CT, USA

■ Currently focusing on the exploitation of bidirectional communication between the robot and the human in the context of human-robot collaborative tasks. Working toward the implementation of a more natural and intuitive interaction, in order for it to be more efficient and effective, as well as less demanding for the human partner.

### 2010-2015 - ROBOTICS ENGINEER - IIT - ITALIAN INSTITUTE OF TECHNOLOGY, GENOA, IT

■ Various positions [*Research Fellow*(2010-2011), *Ph.D. Student*(2012-2014), *PostDoctoral Research Fellow* (2015)].

■ Involved in the *Xperience* FP7-ICT-270273 and *WYSIWYD* FP7-ICT-61239 projects, funded by the European Union Seventh Framework Program with a funding of €7,634,000 and €4,583,016 respectively.

## EDUCATION

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### PH.D. IN ROBOTICS (2012-2015) - IIT - ITALIAN INSTITUTE OF TECHNOLOGY, GENOA, IT

■ Thesis title: “*Expanding sensorimotor capabilities of humanoid robots through multisensory integration. A study on the implementation of peripersonal space on the iCub.*”

### MSc (110/110 CUM LAUDE) NEUROENGINEERING (2008-2011) - UNIVERSITY OF GENOA, IT

■ Thesis title: “*Visuo-Haptic Integration for Object Characterization in an Unstructured Environment.*”

### BSc (110/110 CUM LAUDE) BIOMEDICAL ENGINEERING (2005-2008) - UNIVERSITY OF GENOA, IT

■ Thesis title: “*Support Vector Machine Analysis applied to a Manipulator in a Non-Structured Environment.*”

### Student (WITH SCHOLARSHIP) (2005-2008) - ISICT - Institute for Advanced Studies in ICT

■ Successfully selected for scholarship, after thorough examination (only three positions available out of ~100 candidates).

■ Attended a number of supplementary courses (e.g. *Marketing, Management, Effective Communication*, and many more).

## SELECTED PUBLICATIONS

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■ **A. Roncone**, M. Hoffmann, U. Pattacini, L. Fadiga, G. Metta. *Peripersonal space and margin of safety around the body: learning tactile-visual associations in a humanoid robot with artificial skin*. To be published in 2016.

■ **A. Roncone**, M. Hoffmann, U. Pattacini, G. Metta. *Learning Peripersonal space representation through artificial skin for avoidance and reaching with whole body surface*. In 2015 IEEE-RSJ Int. Conf. On Intelligent Robots and Systems - IROS '15.

■ **A. Roncone**, U. Pattacini, G. Metta, L. Natale. *Gaze stabilization for humanoid robots: a comprehensive framework*. In 2014 IEEE-RAS Int. Conf. on Humanoid Robots - HUMANOIDS '14.

■ **A. Roncone**, M. Hoffmann, U. Pattacini, G. Metta. *Automatic kinematic chain calibration using artificial skin: self-touch in the iCub humanoid robot*. In 2014 IEEE Int. Conf. Robotics and Automation - ICRA '14.

■ S. R. Fanello, U. Pattacini, I. Gori, V. Tikhanoff, M. Randazzo, **A. Roncone**, F. Odone, and G. Metta. *3D stereo estimation and fully automated learning of eye-hand coordination in humanoid robots*. In 2014 IEEE-RAS Int. Conf. on Humanoid Robots - HUMANOIDS '14.