

# Alessandro Carfi

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Date of Birth: 02-10-1992

Nationality: Italian

Gender: M

Address: Via Silvio Lagustena 142/16, Genoa, Italy, 16131

**Contacts**

<b>Mob.</b>	(+39) 349-7260534
<b>Tel.</b>	(+39) 010-3778038
<b>Email</b>	alessandro.carfi@dibris.unige.it
<b>Website</b>	dibris.unige.it/carfi-alessandro
<b>GitHub</b>	github.com/ACarfi

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## RESEARCH INTERESTS

In my last year of the Master I have developed an interest toward research in the human robot interaction (HRI) field that led me to apply for a PhD position in Genoa, Italy. Currently my research is focused in applying machine learning techniques to improve HRI in different contexts. I have designed and developed a system based on Recurrent Neural Networks for gesture recognition and tested both in an Ambient Assisted Living application and in a cooperative manufacturing context. In this second scenario I have studied kinesthetic teaching and started exploring possible approaches to increase its efficacy. I am eager to share and discuss ideas for expanding and applying the practical knowledge I have acquired onto new and different fields.

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## EXPERIENCE

*2016-present*      **Università degli Studi di Genova**  
Postdoctoral Researcher

**Project**                      InDex: Robot In-hand Dexterous manipulation by extracting data from human manipulation of objects to improve robotic autonomy and dexterity.

**Supervisor**                      Fulvio Mastrogiovanni

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## TEACHING

*2019 - present*                      **Computer Programming Basics** - Lecturer  
(BSc in Chemical Engineering - Università degli Studi di Genova)

*2020 - present*                      **Computer Programming Basics** - Lecturer  
(BSc in Mechanical Engineering - Università degli Studi di Genova)

*2016 - 2019*                              **Computer Programming Basics** - Teaching Assistant  
(BSc in Computer Engineering - Università degli Studi di Genova)

*2018 - 2019*      **Embedded Systems Programming** - Teaching Assistant  
(MSc in Mechatronics Engineering - University Campus G. Marconi)

*2018 - 2019*      **Embedded System Programming** - Lecturer  
(European Master on Advanced Robotics - Warsaw University of Technology)

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## EDUCATION

*2016-2020*      **Università degli Studi di Genova**  
**PHD, Bioengineering and Robotics**

**Supervisor**      Fulvio Mastrogiovanni

**Thesis Title**      On the role of gestures in human-robot interaction

*2014-2016*      **Ecole Centrale de Nantes - Università degli Studi di Genova**  
**Master Degree in Robotics Engineering, European Master on Advanced**  
**RObotics, EMARO**

**Description**      EMARO is a double degree master program conducted by Ecole Centrale de Nantes (France), Warsaw University of Technology (Poland), the University of Genoa (Italy) and Jaume I University (Spain). The master program is characterized by lectures on Mathematical Modeling, Control Engineering, Computer Engineering and Mechanical Design. (master-emaro.ec-nantes.fr)

**Thesis Title**      A study of Human-Robot handover and influence of item physical quality.

**Supervisors**      Fulvio Mastrogiovanni and Nak Young Chong.

**Collaboration**      The thesis was held in collaboration with the Japan Advanced Institute of Science and Technology (Ishikawa, Japan) where I have spent 5 months.

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*2011-2014*      **Università degli Studi di Genova**  
**Bachelor Degree in Computer Engineering**

**Thesis Title**      Development of an Android application for geotracking,

**Supervisor**      Armando Tachella

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## COMPUTING AND OTHER SKILLS

**Applications:** Matlab, Office, L<sup>A</sup>T<sub>E</sub>X.

**Programming Languages:** Python, C++, C, Java, HTML.

**Operating Systems:** Windows, Unix.

**Languages:** Good English level, Italian mother tongue and speak basic conversational French.

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## PUBLICATIONS

L. Lastrico, A. Carfi, A. Vignolo, A. Sciutti, F. Mastrogiovanni and F. Rea ”**Careful with That! Observation of Human Movements to Estimate Objects Properties**” 13th International Workshop Human-Friendly Robotics, 2020

M. Ruzzon, A. Carfi, T. Ishikawa, F. Mastrogiovanni and T Murakami ”**A multi-sensory dataset for the activities of daily living**” Data in Brief, 2020.

A. Carfi, J. Villalobos, E. Coronado, B. Bruno and F. Mastrogiovanni, ”**Can human-inspired learning behaviour facilitate human-robot interaction?**” International Journal of Social Robotics, 2018.

A. Carfi, F. Foglino, B. Bruno and F. Mastrogiovanni, ”**A multi-sensor dataset of human-human handover**” Data in Brief, 2018.

L. Buoncompagni, A. Carfi and F. Mastrogiovanni, ”**A Software Architecture for Multimodal Semantic Perception Fusion**” in 5th Italian Workshop on Artificial Intelligence and Robotics (AIRO 2018), Trento, Italy, November, 2018.

A. Carfi, C. Motolese, B. Bruno and F. Mastrogiovanni, ”**Online Human Gesture Recognition using Recurrent Neural Networks and Wearable Sensors**” in Proceeding of the 2018 IEEE International Conference on Robot and Human Interactive Communication (RO-MAN 2018), Nanjing, China, August, 2018.

J. Villalobos, E. Coronado, A. Carfi, B. Bruno and F. Mastrogiovanni, ”**Is Kinesthetic Teaching What Smart Factories Really Need?**” in 4th Italian Workshop on Artificial Intelligence and Robotics (AIRO 2017), Bari, Italy, November, 2017.

**REFERENCES** I am happy to supply these on request