



Francesco Leofante

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Gender Male | Date of birth 16 April 1991 | Nationality Italian

CURRENT POSITION

November 2015 - Today

Ph.D. Student in Computer Science

Supervisors: Prof. Armando Tacchella, University of Genoa (Italy) and Prof. Erika Ábrahám, RWTH Aachen University (Germany)

- Topic: Formal Methods for Robotics

(co-tutelle between RWTH Aachen University and University of Genoa)

EDUCATION

September 2013 – August 2015

European Master in Advanced Robotics (EMARO)

Joint MSc (Double Degree) taught by Ecole Centrale de Nantes (France) and University of Genoa (Italy)

- **Laurea Magistrale in Robotics Engineering**

- * Project: Grasping objects with human-in-the-loop safety assurance.
- * Project Grade: 99/100, GPA: 96.21/100, Final Grade: 107/110

- **Master en Robotique, Automatique, Informatique appliquée**

- * Project: Motion Planning in Dynamic Environments
- * Project Grade: 98/100, GPA: 92.4/100, Final Grade: 92.4/100 mention *très bien* (1st honor eqvl)

September 2010 – August 2015

ISSUGE - ISICT: Excellence Programme in Management and Economics

University of Genoa, Genoa (Italy)

- Courses attended: Marketing, Project Management, Business Plan, Innovation Management (list not exhaustive)

September 2010 – July 2013

Laurea Triennale in Electronics Engineering (BSc eqvl)

University of Genoa, Genoa (Italy)

- Project: Design and implementation of a system for natural dialogue generation with Non Player Characters
- Project Grade: 8/8, GPA: 29.05/30, Final Grade: 110/110 *cum laude*

TEACHING EXPERIENCE

September 2016 - Today

Teaching Assistant

- Design and Analysis of Algorithms (BSc in Computer Engineering, University of Genoa)
- Modelling and Verification of Cyber-Physical Systems (MSc in Computer Engineering, University of Genoa)

December 2012 – December 2013

Scientific Demonstrator

Matefitness, Project of CNR (Italian National Research Council), Genoa (Italy)

- Organized workshops and events to present Mathematics to undergraduate students and to the general public in entertaining and creative ways.

STUDENTS SUPERVISED

Since the beginning of my Ph.D. I have supervised 1 MSc thesis and 3 MSc projects.

TALKS

- "Combining Static and Runtime Methods to Achieve Safe Standing-up for Humanoid Robots", 7th International Symposium on Leveraging Applications of Formal Methods, Corfu (Greece) (Oct. 2016).
- "Formal Methods for Robust AI", Dept. of Computer Science, University of Genoa (Italy) (Oct. 2016).
- "Model Checking Probabilistic Systems: Safe Standing-up for Humanoid Robots", Dept. of Computer Science, University of Genoa (Italy) (Nov. 2016).
- "Model Checking Hybrid Systems: Verifying Emergent Behaviors in Robot Swarms", Dept. of Computer Science, University of Genoa (Italy) (Nov. 2016).
- "Combining Static and Runtime Methods to Achieve Safe Standing-up for Humanoid Robots", Dept. of Computer Engineering, University of Sassari (Italy) (Jan. 2017)

RESEARCH ACTIVITIES AND VISITS

October 2016 **Research Visit**

RWTH Aachen University, Aachen (Germany) - Dates: 4-7 Oct.
Collaboration with Prof. Erika Ábrahám, Theory of Hybrid Systems Group.

December 2015 **Research Visit**

The University of Edinburgh, Edinburgh (UK) - Dates: 7-16 Dec.
Collaboration with Prof. Subramanian Ramamoorthy, Robust Autonomy and Decision Group.

February 2015 - July 2015 **Research Internship in Mobile Robotics**

Airbus Group Innovations, Nantes (France) - Dates: 1 Feb. - 31 Jul.

- Study and implementation of new solutions for robot localization and path planning inside an aircraft
- Results have been deployed in the real aircraft in the assembly lines.

July 2014 **Internship in Software Development**

Artificial Intelligence Lab, University of Genoa, Genoa (Italy) - Dates: 1-31 Jul.

- Developed modules for object detection and gaze control for the humanoid robot ICub.

CONFERENCES, WORKSHOPS AND SCHOOLS ATTENDED

November 2016 **The 15th International Conference of the Italian Association for Artificial Intelligence (AIxIA'16)**
Genoa, Italy

October 2016 **7th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation (ISoLa'16)**
Corfu, Greece

September 2016 **Gaussian Process and Uncertainty Quantification Summer School**
Organizer: N. Lawrence (University of Sheffield)

July 2016 **12th Summer School on Modelling and Verification of Parallel Processes**
Organizer: G. Delzanno (University of Genoa)

June 2016 **Brains, Minds and Machines Workshop**
Organizers: B. Katz (MIT), G. Metta (IIT), L. Rosasco (University of Genoa)

REVIEWER FOR CONFERENCES

AAAI'17, HSCC'17, TASE'17

- [1] N. Arnaldi, C. Barone, F. Fusco, F. Leofante, and Armando Tacchella. Autonomous driving and undergraduates: an affordable setup for teaching robotics. In *Proceedings of the 3rd Italian Workshop on Artificial Intelligence and Robotics A workshop of the XV International Conference of the Italian Association for Artificial Intelligence (AI*IA 2016)*, to appear.
- [2] Francesco Leofante, GwénoLé LeMoal, Gaetan Garcia, and Patrice Rabaté. Improving Monte Carlo localization using reflective markers: An experimental analysis. In *Proceedings of the 7th Workshop on Planning, Perception and Navigation for Intelligent Vehicles A workshop of the International Conference on Intelligent Robots and Systems, IROS 2015, Hamburg, Germany, September 28 - October 2, 2015*, 2015.
- [3] Francesco Leofante, Luca Pulina, and Armando Tacchella. Learning with safety requirements: State of the art and open questions. In *Proceedings of the 23rd RCRA International Workshop on Experimental Evaluation of Algorithms for Solving Problems with Combinatorial Explosion 2016 (RCRA 2016) A workshop of the XV International Conference of the Italian Association for Artificial Intelligence (AI*IA 2016)*, to appear.
- [4] Francesco Leofante and Armando Tacchella. Learning in physical domains: Mating safety requirements and costly sampling. In *AI*IA 2016: Advances in Artificial Intelligence - XVth International Conference of the Italian Association for Artificial Intelligence, Genova, Italy, November 29 - December 1, 2016, Proceedings*, pages 539–552, 2016.
- [5] Francesco Leofante, Simone Vuotto, Erika Ábrahám, Armando Tacchella, and Nils Jansen. Combining static and runtime methods to achieve safe standing-up for humanoid robots. In *Leveraging Applications of Formal Methods, Verification and Validation: Foundational Techniques - 7th International Symposium, ISO/FA 2016, Imperial, Corfu, Greece, October 10-14, 2016, Proceedings, Part I*, pages 496–514, 2016.

AWARDS AND SCHOLARSHIPS

September 2013 – August 2015	EMARO Consortium Scholarship Tuition waiver awarded to the top 2 EU students selected for the MSc, 6000 €
September 2013 – August 2015	Excellence Program in Management and Economics Scholarships awarded to the top 5 students passing the entrance examination (~ 30 candidates), 6000 €
September 2010 – September 2013	Excellence Program in Management and Economics Scholarships awarded to the top 6 students passing the entrance examination (~ 60 candidates), 9000 €

SKILLS AND INTERESTS

Languages	Italian (native speaker), English (TOEFL Score 114/120, August 2015), French (TFI Score 970/990, March 2015)
Computer skills	Programming Languages and Simulation Tools: Java, Python, Matlab, Simulink Operating Systems: Linux, MS Windows, MacOS Documentation: \LaTeX , MS Office Robot Software Development: ROS CAD Softwares: ProE Robot Simulation Environments: V-REP
Interests	Hiking, Running, Reading, Canyoning

REFERENCES

Prof. Armando Tacchella

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