

PIETRO BALATTI

PhD student at Istituto Italiano di Tecnologia (IIT)

@ pietrobalatti@gmail.com +393487014737 Genoa, Italy Webpage
in pietrobalatti GoogleScholar ResearchGate



EDUCATION

Ph.D. in Robotics

Istituto Italiano di Tecnologia (IIT) - University of Pisa
"Human-Robot Interfaces and Physical Interaction" laboratory

Nov 2017 - Ongoing Genoa, Italy

Advisor: Dr. Arash Ajoudani

Developing robotic control strategies for unstructured environments. Specialized on autonomous robotic behaviors able to distinguish expected interactions from external disturbances, and accordingly self-tune the impedance parameters of torque-controlled robots.

M.S. in Computer Science and Engineering

Politecnico di Milano

Oct 2014 - Dec 2016 Milan, Italy

Advisor: Prof. Matteo Matteucci

Thesis title: A Model Predictive Control architecture for an unmanned Electric Vehicle

Final grades: 110/110 with honors

M.S. Erasmus+ project

Universitat Politècnica de València (UPV)

Sept 2015 - Jan 2016 Valencia, Spain

During my exchange period, I was selected in the UPV team that participated in an interdisciplinary practical project organized by the Technische Universität Kaiserslautern. The project was about the collaborative elaboration of a specific, industry relevant, problem in cooperation with the German automotive group OPEL.

B.S. in Computer Science and Engineering

Politecnico di Milano

Sept 2011 - Sept 2014 Milan, Italy

Thesis: Development of a software version of the Sheepland board game

Final grades: 93/110

PROFESSIONAL EXPERIENCE

Fellow Junior

Istituto Italiano di Tecnologia (IIT)
"Human-Robot Interfaces and Physical Interaction" laboratory

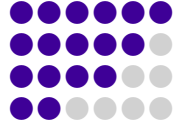
May 2017 - Oct 2017 Genoa, Italy

Advisor: Dr. Arash Ajoudani

Working on whole body control of WALK-MAN humanoid robot for manipulation tasks, e.g. debris removal task. I was responsible of the "Door Unblocking Task" in the Final Validation Scenario of the European Union project WALK-MAN.

LANGUAGES

Italian
English
Spanish
German



ACHIEVEMENTS

- "KUKA Innovation Award 2018" Winner - April 2018**
I was responsible of the robot control of the framework developed by the winning team "CoAware" from IIT.
- "KUKA College Certificate on LBR iiwa Commissioning and Programming" - December 2017**
Sw version Sunrise OS 1. Training location: KUKA College Augsburg.
- "IROS 2018 Scavenger Hunt" Winner, award organized by IEEE RAS Student Activities Committee - October 2018**

COMPUTER SKILLS

Programmed industrial robots

- FrankaEmika Panda (with FCI, franka_ros)
- KUKA LBR iiwa (with Sunrise.OS and FRI)
- KUKA LBR 4+ (with FRI)

Programming languages

- C++ C ROS Java HTML/CSS
- UML bash Wolfram Language
- SQL LaTeX

Technologies

- Git GitHub SVN Maven
- GoogleCode Bitbucket
- odeint library

Tools

- Gazebo KDevelop Eclipse
- NetBeans Sonar TeXShop
- MATLAB Mathematica

PUBLICATIONS

Journal Articles

- Kim, W. et al. (Accepted, to be published in 2019). "A Reconfigurable and Adaptive Human-Robot Collaboration Framework for Improving Worker Ergonomics and Productivity". In: *IEEE Robotics and Automation Magazine (RAM)*.

Conference Proceedings

- Balatti, P. et al. (2019). "Towards Robot Interaction Autonomy: Explore, Identify, and Interact". In: *2019 IEEE International Conference on Robotics and Automation*. IEEE.
- Balatti, P. et al. (2018). "A Self-tuning Impedance Controller for Autonomous Robotic Manipulation". In: *2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. IEEE, pp. 5885–5891.
- Balatti, P. et al. (2017). "A Manipulation Framework for Debris Removal using WALK-MAN Humanoid". In: *10th International Workshop on Human-Friendly Robotics (HFR)*.

UNIVERSITY PROJECTS

- Pose estimation of an Electric Vehicle;
- Interdisciplinary practical project in cooperation with OPEL automotive group;
- Development (SW and HW) of an indoor/outdoor four-wheeled robot (ROS, C++);
- Development of a weather based online calendar (JEE);
- Development of a web application - Website for an High School (HTML, CSS, Ruby On Rails);
- Development of a Forum web application (HTML, Javascript, Node.js);
- Lifetime reliability estimation for multi-core systems.

OTHER EXPERIENCES

Volunteering

Entertainer/host of local concerts and singing contests

Società Democratica Operaia di Mutuo Soccorso

 Mar 2012 – May 2014  Chiavenna, Italy

Amateur actor

"Meramente" theater company

 Jan 2010 – Jun 2012  Chiavenna, Italy

Summer jobs

Cook assistant/waiter/handyman/dishwasher

Various restaurants/hotels

 Every Summer 2008 – 2013  Chiavenna, Italy

EXTRACURRICULAR ACTIVITIES

- IIT Volleyball team member (Seasons 2017/2018, 2018/2019);
- Spanish courses by "Folks" association and UPV;
- Theater course offered by "Teatro delle biglie" association;
- Improvisational theater course by "Teatro delle biglie" association;
- Yoga course by "Folks" association;

COMMUNICATION SKILLS

Gained through team projects and individual research presentations, including "Pecha-Kucha" format in both English and Spanish. Skills also improved thanks to several theater and improvisational theater courses and volunteering as host at local events.

ORGANIZATIONAL SKILLS

High teamwork spirit and leadership capacities achieved working on several university projects and international practical seminars with people of different backgrounds, cultures and nationalities. Organizational skills also improved through coordination and hosting of local events, concerts and singing contests.

INTERESTS

Robotics Biomedical robotics
Autonomous Driving Space exploration
Home automation Smart cities
Internet of things Renewable energies

REFEREES

Dr. Arash Ajoudani

@ Istituto Italiano di Tecnologia (IIT)

✉ Arash.Ajoudani@iit.it

📍 Via Morego 30, 16163 Genova (GE), Italy

Prof. Matteo Matteucci

@ Politecnico di Milano

✉ matteo.matteucci@polimi.it

📍 Via Ponzio 34/5, I20133, Milan (Italy)