RAFAEL A. RODRIGUEZ S.

Computer Science and Engineering

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EDUCATION

M.Sc. Computer Science and Engineering

Politecnico di Milano

📅 September 2016 – October 2018   📍 Milan, Italy

🎓 **Cum Laude. GPA:** 29.15/30

B.Sc. Electronic Engineering

Universidad Simon Bolivar

📅 September 2010 – June 2016   📍 Caracas, Venezuela

🎓 **Summa Cum Laude. GPA**: 4.9/5

EXPERIENCE

Research Fellow

AIRLab, Politecnico di Milano

📅 November 2018-Present   📍 Milan, Italy

Research on novel Simulation-based games algorithms for computation of optimal defense strategies of naval ships against intelligent missiles. Co-advising of a master student's thesis work.

Thesis in Machine Learning

AIRLab, Politecnico di Milano

📅 December 2017 – October 2018   📍 Milan, Italy

Research on novel methods for transferring past knowledge from Reinforcement Learning tasks using Variational Inference Methods. Advisor: Marcello Restelli

Laboratory Assistant in Robotics

AIRLab, Politecnico di Milano

📅 December 2016 – June 2017   📍 Milan, Italy

I re-structured electronics configuration of Differential Robotic platform *Robocom* and implemented *Robocom*'s low-level control based on Embedded System technology Nova Core and ROS framework. ROS-based sensor Data acquisition system for LIDARs, sonars, stereocameras and Kinect. Advisor: Matteo Matteucci.

Full-time R&D Intern

STMicroelectronics

📅 February 2015 – July 2015   📍 Agrate-Brianza, Italy

- Debugged design of wearable platform prototype based microcontrollers STM32.
- Proposed redesign proposals for future version of the board to implement solutions for misbehaving, inefficient modules and malfunctioning image acquisition system.
- Proposed and evaluated Image Analysis techniques for automatic sharp image acquisition.

Teaching Assistant

Universidad Simon Bolivar

📅 September 2013 – April 2014   📍 Caracas, Venezuela

Taught the laboratory sessions of Basic Programming in C (2hrs/week) and graded 30% of the course via laboratory quizzes

PUBLICATIONS

- Tirinzoni, Andrea*, **Rodriguez Sanchez, Rafael***, and Marcello Restelli. "Transfer of Value Functions via Variational Methods". In: *Advances in Neural Information Processing Systems 32 (NeurIPS 2018)*.

AWARDS

🏆 **MAECI Merit Scholarship**
for Academic Year 2017-2018 awarded by the Italian Ministry of Foreign Affairs to cover tuition fees and stipend

🎓 **Outstanding Mention**
for Bachelor's thesis awarded by unanimous jury for exceeding expectation of undergraduate works

RESEARCH INTEREST

Machine Learning, Robot Learning, optimization-based Human-Robot interaction, Reinforcement Learning, Algorithmic Game Theory, Multi-agent Systems.

COURSE PROJECTS

⚙ **Emotional Teo**
📍 **I3Lab, Politecnico di Milano** 📅 Oct 2016 – Feb 2017
Design of interactive behavior for a *Huggable Robot* designed for children with Neurodevelopmental Disorders.

SALIENT COURSES

AI, Machine Learning, Economics and Computation, Advanced Algorithms and Parallel Programming, Optimization, Image Analysis, Robotics.

SKILLS

Python 3 for Scientific Computation (**NumPy, SciPy, Matplotlib**), PyTorch, MATLAB. Java, C and Embedded C. ROS, OpenMP. SQL, XML. Git.

LANGUAGES

Spanish
English
Italian