

# Jim Martin Catacora Ocana

Via Taddeo Crivelli 50 • Rome • Lazio • Italy • 00133

[catacora@diag.uniroma1.it](mailto:catacora@diag.uniroma1.it)

(+39) 371 154 4847

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## EDUCATION

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| 11/2018 – present | <b>Sapienza Università di Roma</b> , Rome, Italy<br><i>PhD in Computer Science</i> <ul style="list-style-type: none"><li>• <b>Topic of PhD thesis:</b> Sample-efficient reinforcement learning algorithms for domains with sparse rewards.</li></ul>   |
| 09/2016 – 10/2018 | <b>Sapienza Università di Roma</b> , Rome, Italy<br><i>Master of Science in Artificial Intelligence and Robotics</i> <ul style="list-style-type: none"><li>• <b>Final grade:</b> 110/110 (with Lode).</li><li>• <b>Master's thesis:</b> <i>Cooperative Behaviors for RoboCup 3D through Deep Reinforcement Learning</i>. Implementation and comparison of two multi-agent reinforcement learning approaches, namely: independent and joint-action learners, in a new multi-robot cooperative and adversarial soccer scenario, called 2 versus 2 free-kick task, and within a physically realistic 3D simulator with NAO humanoid robots as players.</li></ul>                        |
| 04/2002 – 12/2007 | <b>Universidad Nacional de Ingeniería</b> , Lima, Peru<br><i>Bachelor of Science in Mechatronic Engineering</i> <ul style="list-style-type: none"><li>• Ranked in the <b>top 20%</b> of my graduating class.</li><li>• <b>Bachelor's thesis:</b> <i>Generation of Non-Reactive Behaviors in Robotic Controllers by means of Evolutionary Algorithms</i>. This work involved researching the suitability of different artificial neural networks models, such as: Continuous-Time Recurrent Neural Networks, Echo State Networks and Spiking Neural Networks with added Spike-Timing Dependent Plasticity, for evolving a robotic controller endowed with a working memory.</li></ul> |

## PUBLICATIONS

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| 2019 | Jim Martin Catacora Ocana, Francesco Riccio, Roberto Capobianco, Daniele Nardi, "Cooperative Multi-Agent Deep Reinforcement Learning in a 2 Versus 2 Free-Kick Task", In The 23rd Annual RoboCup International Symposium 2019(to appear), 2019.   |
| 2019 | Jim Martin Catacora Ocana, Francesco Riccio, Roberto Capobianco, Daniele Nardi, "Cooperative Multi-Agent Deep Reinforcement Learning in Soccer Domains", In Proceedings of the 18th International Conference on Autonomous Agents and MultiAgent Systems, International Foundation for Autonomous Agents and Multiagent Systems, Richland, SC, pp. 1865-1867, 2019. |
| 2008 | J. Catacora, N. Conche, E. Huamaní and J. Meneses, "Quadruped Robot for Autonomous Exploration ER-12", In Mechanics Based Design of Structures and Machines: An International Journal, Volume 36, Issue 4, 2008.  |

## WORKSHOP PRESENTATIONS

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05/2019      **Autonomous Robots and Multirobot Systems (ARMS) 2019**, affiliated with  
**The 18th International Conference on Autonomous Agents and Multiagent  
Systems (AAMAS 2019)**, Montreal, Canada  
Talk: Cooperative Multi-Agent Deep Reinforcement Learning in Soccer  
Domains

## SKILLS

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| Programming | Python, Java, C++, Tensorflow, Javascript, MATLAB, Octave, Lua, Labview, Prolog, HTML, Visual Basic, others. |
| Spanish     | Native Language.   |
| English     | Fluent (TOEFL IBT 106/120, IELTS 7.5/9).   |
| German      | Intermediate level (B2 Zertifikat).  |
| Italian     | Intermediate level.  |