

Ruben Glatt

September 12, 2018

Ph.D. student at Escola Politécnica da USP

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Summary

Ruben has a mechatronics engineering background but turned to artificial intelligence where his main interest lies in machine learning (ML) research, particularly in Deep Reinforcement Learning (DRL) in combination with knowledge transfer for cognitive autonomous decision-making agents.

Currently, Ruben is a Ph.D. student at the [Escola Politécnica](#) of the [University of São Paulo \(USP\)](#), Brazil. He holds a Brazilian master degree in Mechanical Engineering in the area of controlling mechanical systems from the [Universidade Estadual Paulista Júlio de Mesquita Filho, UNESP](#) and a German Diplom-

Ingenieur degree in Mechatronics in the area of sensors and robotics from the [Karlsruhe Institut of Technology, KIT](#).

Apart from his academic experiences, Ruben has acquired years of professional experience before and during his studies while working in the technology sector and has recently become the Lead Organizer at [PAPIS.io](#) to host ML conferences all over the world.

Ruben's long term research intention is to create intelligent agents utilizing scalable Reinforcement Learning architectures for real-world applications.

Education

[Escola Politécnica da Universidade de São Paulo, USP](#)

SÃO PAULO, BRAZIL

Ph.D. in Computer Engineering, ongoing (CAPES scholar 03/2015-03/2019)

03/2015 – present

Improving DRL through knowledge transfer: Research project to extend DRL algorithms with Transfer Learning capabilities to improve the generalization of knowledge to speed up and improve learning for sequential tasks. *Advisor:* Prof. Dra. Anna Helena Reali Costa

[Universidade Estadual Paulista Júlio de Mesquita Filho, UNESP](#)

GUARATINGUETÁ, BRAZIL

M.Eng. in Mechanical Engineering, completed (CAPES scholar 04/2013-07/2014)

08/2012 – 07/2014

Deep Learning Architecture for Gesture Recognition: Multiple instance, user independent recognition of Italian sign gestures from multi-modal data using a Deep Belief Net. *Advisor:* Prof. Dr. José Celso Freire Junior, *Co-Advisor:* Dr. Daniel Julien Barros da Silva Sampaio

[Karlsruhe Institut of Technology, KIT](#)

KARLSRUHE, GERMANY

Diplom-Ingenieur in Mechatronics, completed

10/2004 – 09/2011

Micro-controller board for autonomous robotics platform: Developed circuit board for motor control and sensor evaluation.

Evaluation and presentation of measurements of a solar system: Processed statistical solar data and integrated evaluations into faculty website.

Business and maturity models in the context of technical services: Evaluated CMMI and SPICE integration for business models for technical service providers.

Advisor: Prof. Dr.-Ing. Michael Braun

Selection of Publications

R. Glatt, F. L. d. Silva & A. H. R. Costa *Case-based Policy Inference for Transfer in Reinforcement Learning.* In 1st Workshop on Scaling-Up Reinforcement Learning at the 28th European Conference on Machine Learning (ECML), 2017, Skopje, Mazedonia, 2017.

F. L. d. Silva, R. Glatt, & A. H. R. Costa *Simultaneously Learning and Advising in Multiagent Reinforcement Learning.* In 16th International Conference on Autonomous Agents and Multiagent Systems (AAMAS), São Paulo, Brazil, 2017.

R. Glatt, & A. H. R. Costa *Policy Reuse in Deep Reinforcement Learning.* In 31st AAAI Conference on Artificial Intelligence (AAAI-17), Student Paper, San Francisco, USA, 2017.

R. Glatt, F. L. d. Silva, & A. H. R. Costa *Towards Knowledge Transfer in Deep Reinforcement Learning.* In 2016 Brazilian Conference on Intelligent Systems (BRACIS), IEEE, Recife, Brazil, 2016.

F. L. d. Silva, R. Glatt, & A. H. R. Costa *Object-Oriented Reinforcement Learning in Cooperative Multiagent Domains.* In 2016 Brazilian Conference on Intelligent Systems (BRACIS), IEEE, Recife, Brazil, 2016.

R. Glatt, J. C. Freire Jr., & D. J. B. S. Sampaio *Proposal for a Deep Learning Architecture for Activity Recognition.* In International Journal of Engineering Technology (IJET-IJENS), Vol. 14, No. 05, p. 24-28, October 2014.

Awards & Honors

5th Heidelberg Laureate Forum (HLF) Outstanding Young Researcher	2017
31st AAAI Conference on Artificial Intelligence (AAAI) Doctoral Consortium travel grant (<i>Improving DRL through knowledge transfer</i>) Best Student Poster (<i>An Advising Framework for Multiagent Reinforcement Learning Systems</i>)	2017
Google Research Award Latin-America Winner (<i>Improving DRL through knowledge transfer</i>)	2015 + 2016
5th Postgraduate Workshop in Computer Engineering Distinguished Work Award (<i>Improving DRL through knowledge transfer</i>)	2016
5th Brazilian Conference on Intelligent Systems (BRACIS) Best Paper 1st Place (<i>Object-Oriented Reinforcement Learning in Cooperative Multiagent Domains</i>)	2016
Nvidia GPU Grant GPU Donation for D.Sc. Project	2016
Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) D.Sc. Research Scholarship	03/2015 – present
Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) M.Sc. Research Scholarship	04/2013 – 07/2014
Fundação para o Desenvolvimento da UNESP (FUNDUNESP) Project Research Scholarship	03/2012 – 03/2013

Other Academic Experiences

Conference Volunteer	ICML 2016, NIPS 2016
Event Organization	1st Workshop on <i>Transfer in Reinforcement Learning (TiRL)</i> at AAMAS 2017. 1st Workshop on <i>Scaling up Reinforcement Learning (SURL)</i> at ECML 2017. <i>PAPIs Connect 2017</i> , São Paulo, Brazil.
Other	Program Committee member (TiRL, 2017; SURL, 2017; PAPIs, 2017, 2018), Publication Reviewer (since 2015), Undergraduate Thesis Committee Member (UNESP, 2014), and student mentor (USP, 2017)

Professional Experiences

Research Intern Microsoft Research <i>Test automation:</i> Worked at the intersection of Software Engineering and Machine Learning to apply Reinforcement Learning techniques to facilitate software testing.	REDMOND (WA, USA) 06/2018 – 10/2018
Lead Organizer PAPIs.io <i>Project management:</i> Planned and organized international Machine Learning conferences in London, Boston, & São Paulo. <i>Business Development:</i> Expanded conferences to LATAM and increased amount of conferences. <i>Partner management:</i> Initiated and negotiated new partnerships. <i>People management:</i> Selected and coordinated team members.	Various locations 02/2017 – present
Research Assistant (Bolsista FUNDUNESP) Universidade Estadual Paulista Júlio de Mesquita Filho, UNESP <i>Project management:</i> Planned and projected a condition based maintenance system in hydroelectric power plants using thermal imaging. <i>Hard- & Software Development:</i> Realized a low-cost surveillance system based on open source micro-controller technology for automatic unsupervised monitoring. <i>Mechanical Design:</i> Designed support structures for static and dynamic camera systems.	GUARATINGUETÁ (BRAZIL) 03/2012 – 03/2013
Datacenter Engineer United Internet AG <i>Datacenter monitoring:</i> Developed and administered control and monitoring systems and sensor networks. <i>Datacenter optimization:</i> Supported infrastructure optimization based on statistical analysis of sensor data and evaluation of new technologies. <i>Server relocations:</i> Planned and organized server relocations in and between Germany and the US. <i>Server Homing:</i> Technical responsible for server homing customers. <i>Technical support:</i> Handled all datacenter related issues in a small team.	KARLSRUHE (GERMANY) 09/2001 – 12/2011
Energy Engineer SanioSolar <i>Energy consulting:</i> Projected, installed and monitored small photovoltaic plants and engineering services around energy-efficiency for SMBs and private households.	KARLSRUHE (GERMANY) 07/2011 – 12/2011