

# Felipe Leno da Silva (Leno) *Ph.D. in Artificial Intelligence, Reinforcement Learning.*

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## Research Experience Keywords:

Artificial Intelligence, Machine Learning, Reinforcement Learning (RL), Transfer Learning, Multiagent Systems

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## Recent Professional Experience

I had the opportunity of working in both industry and academic research environments across different countries and using various programming languages and tools.

<i>Staff Reinforcement Learning Researcher</i>	LIVERMORE, CA, USA
<b>Lawrence Livermore National Lab</b>	12/2022 – present
Research on Reinforcement Learning applied to antibody therapeutics development, smart transportation, and other applications of national interest.	
<i>Postdoctoral Reinforcement Learning Researcher</i>	LIVERMORE, CA, USA
<b>Lawrence Livermore National Lab</b>	04/2021 – 12/2022
Research on Reinforcement Learning applied to antibody therapeutics development, power converter automated design, and other applications of national interest.	
<i>Postdoctoral Machine Learning Researcher</i>	SÃO PAULO, BRAZIL
<b>Advanced Institute for AI</b>	12/2019 – 04/2021
Postdoctoral research investigating covariate shift for models predicting creditworthiness.	
<i>Machine Learning Research Intern</i>	EDMONTON, CANADA
<b>Borealis AI (Royal Bank of Canada)</b>	06/2019 – 08/2019
Research aiming at proposing techniques for better estimation of agent uncertainty on RL tasks. Performed at the Royal Bank of Canada under the supervision of Dr. Matthew E. Taylor.	

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## Patent Applications

SILVA, F. L.; HERNANDEZ-LEAL, P.; KARTAL, B.; TAYLOR, M. *System and Method for Uncertainty-based Advice for Deep Reinforcement Learning Agents*. U.S. Patent Application No. 17/011,310, 2021.

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## Selected Publications

My research has been featured in over 40 publications and has over 900 citations at various conference and journal venues. I am also a published book author.

- SILVA, F. L.; COSTA, A. H. R. *Transfer Learning for Multiagent Reinforcement Learning Systems*. Morgan Claypool Publishers (Book), 2021.
- SILVA, F. L.; WARNELL, G.; COSTA, A. H. R.; STONE, P. *Agents Teaching Agents: A Survey on Inter-agent Transfer Learning*. *Autonomous Agents and Multi-agent Systems*, 34(9), 2020.
- SILVA, F. L.; HERNANDEZ-LEAL, P.; KARTAL, B.; TAYLOR, M. *Uncertainty-Aware Action Advising for Deep Reinforcement Learning Agents*. *AAAI Conference on Artificial Intelligence*, 2020.
- SILVA, F. L.; COSTA, A. H. R. *A Survey on Transfer Learning for Multiagent Reinforcement Learning Systems*. *Journal of Artificial Intelligence Research (JAIR)*, v. 61, p. 645-703, 2019.
- SILVA, F. L.; GLATT, R.; COSTA, A. H. R. *Simultaneously Learning and Advising in Multiagent Reinforcement Learning*. *Int. Conf. on Autonomous Agents and Multiagent Systems (AAMAS)*, 2017.
- GLATT, R.; SILVA, F. L.; BIANCHI, R.; COSTA, A. H. R. *DECAF: Deep Case-based Policy Inference for Knowledge Transfer in Reinforcement Learning*. *Expert Systems with Applications*, v 156, 2020.
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## Awards and Honors

- **Director's Science and Technology Award Recipient @ LLNL** 2022
  - **Directorate Award: Publication @ LLNL** 2022
  - **CTDIAC: Third place in the Brazilian Thesis Competition on AI, edition 2018-2020.** 2020
  - **AAAI: Honorable mention as Best Student Poster at the 31st AAAI conference.** 2017
  - **BRACIS: Best Paper Award at the 5th BRACIS conference.** 2016
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## Education

I am a Computer Scientist and have been focusing on academic research since my graduation. My main expertise is Knowledge Reuse for Multiagent Reinforcement Learning. However, I have worked in multiple projects across different subareas of Machine Learning and have experience in multidisciplinary projects.

University of São Paulo, USP	SÃO PAULO, BRAZIL
partially carried out at the University of Texas at Austin	AUSTIN, USA
<b>Ph.D. in Computer Engineering (FAPESP scholar)</b>	03/2015 – 09/2019
<i>Transfer Learning for Multiagent Reinforcement Learning Systems</i> - This research aims at improving Multiagent Reinforcement Learning Algorithms to allow knowledge generalization and reuse across similar but different tasks.	
Advisors: Anna Helena Reali Costa (Brazil) and Peter Stone (USA)	
University of São Paulo, USP	SÃO PAULO, BRAZIL
<b>M.Sc. in Computer Engineering (CNPq scholar)</b>	02/2013 – 02/2015
<i>Automated Bee Species Identification through Wing Images</i> - This research studied methods to allow an automated bee species identification through Computer Vision and Machine Learning techniques applied to bee wing images.	
Advisor: Anna Helena Reali Costa	
Pontifical Catholic University of São Paulo, PUC-SP	SÃO PAULO, BRAZIL
<b>B.S. in Computer Science (PROUNI scholar)</b>	02/2009 – 12/2012

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## Additional Academic and Research Experience

I have organized several workshops and served as a reviewer for various conferences and journals such as ICML, NeurIPS, IJCAI, AAAI, AAMAS, IEEE Trans. on Cybernetics, Machine Learning, and Neurocomputing.

Workshop Organization	
Adaptive Learning Agents (ALA) Workshop at AAMAS	2020 - 2022
Scaling-Up Reinforcement Learning Workshop at IJCAI and ECML/PKDD	2017, 2019
Workshop on Transfer in Reinforcement Learning at AAMAS	2017
Invited Talks	
University of Michigan - Dearborn	2022
Workshop on Human-Aligned Reinforcement Learning for Autonomous Agents and Robots	2021
Senior Program Committee Member	
AAAI Conference on Artificial Intelligence	2022
International Joint Conference on Artificial Intelligence (IJCAI)	2021
Program Committee Member/Reviewer	
International Conference on Machine Learning (ICML)	2020
Conference on Neural Information Processing Systems (NeurIPS)	2021
International Joint Conference on Artificial Intelligence (IJCAI)	2018, 2019
International Conference on Autonomous Agents and Multiagent Systems (AAMAS)	2020, 2021
AAAI Conference on Artificial Intelligence (AAAI)	2021
International Conference on Robot Learning (ICRL)	2021, 2022
Scientific Journal Referee	2015 – present
Machine Learning	
IEEE Transactions on Cybernetics	
Neurocomputing	
Autonomous Agents and Multi-Agent Systems	
Masters/PhD Thesis Committee Member	
University of São Paulo, USP	2022
Federal University of Rio Grande do Sul, UFRGS	2021
Undergraduate Research Co-mentor	
Technische Universität München, TUM	2020
University of São Paulo, USP	2015 – 2018

