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

leno@llnl.gov • Profile on Google Scholar: https://scholar.google.com.br/citations?user=XbyIZQ4AAAAJ
San Francisco Bay Area, CA • USA • https://f-leno.github.io

Research Experience Keywords:

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

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.

Postdoctoral Reinforcement Learning Researcher — Livermore, CA, USA
Lawrence Livermore National Lab — *04/2021 – present*
Research on Reinforcement Learning applied to various projects of national interest.

Postdoctoral Machine Learning Researcher — São Paulo, Brazil
Advanced Institute for AI — *12/2019 – 04/2021*
Postdoctoral research investigating covariate shift for models predicting creditworthiness.

Machine Learning Research Intern — Edmonton, Canada
Borealis AI (Royal Bank of Canada) — *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.

Visiting Researcher — Austin, USA
University of Texas at Austin — *04/2018 – 03/2019*
Multiagent RL research as a member of the Learning Agents Research Group (LARG) under the supervision of Professor Peter Stone.

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.

Selected Publications

My research has been featured in over 30 publications at various conference and journal venues such as JAIR, AAAI, IJCAI, AAMAS, and IEEE Transactions on Cybernetics. 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.

Awards and Honors

- **CTDIAC: Third place in the Brazilian Thesis Competition on AI, edition 2018-2020.** *2020*
- **Tese-USP: Honorable mention as Best Engineering Thesis at the University of São Paulo** *2020*
- **HLC: Outstanding Young Researcher at the 6th and 8th Heidelberg Laureate Forum.** *2018, 2020*
- **AAAI: Honorable mention as Best Student Poster at the 31st AAAI conference.** *2017*
- **BRACIS: Best Paper Award at the 5th BRACIS conference.** *2016*

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
Ph.D. in Computer Engineering (FAPESP scholar) — *03/2015 – 09/2019*
Transfer Learning for Multiagent Reinforcement Learning Systems - 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
M.Sc. in Computer Engineering (CNPq scholar) — *02/2013 – 02/2015*
Automated Bee Species Identification through Wing Images - 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.S. in Computer Science (PROUNI scholar) — *02/2009 – 12/2012*

Additional Academic and Research Experience

I will be one of the organizers of the next ALA workshop and have been the main organizer of the SURL workshop series. I have also 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*

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*

Scientific Journal Referee — 2015 – present

Machine Learning
IEEE Transactions on Cybernetics
Neurocomputing
IEEE Transactions on Systems, Man, and Cybernetics: Systems

Master Thesis Committee Member

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*

Main Programming Languages / Frameworks:

Python, Java, Tensorflow, PyTorch, Scikit-learn, MATLAB