PEHUÉN MOURE

(757) 969-7486 • pehuen1@gmail.com

Researcher at the intersection of machine learning and neuroscience, specializing in developing robust AI systems that generalize across domains: from neuroprosthetic control to multi-agent robotics. Passionate on translating theoretical advances into practical solutions, demonstrated through implementations at Amazon Robotics and interdisciplinary work in visual prostheses at ETH Zurich.

RESEARCH AND EDUCATION

ETH Zurich - Institute of Neuroinformatics **Zurich, Switzerland**

PhD Candidate in Information Technology and Electrical Engineering *October 2022 – Present*

- Developing novel deep learning approaches for controlling neural activity in visual prostheses
- Created end-to-end optimization framework for prosthetic vision using spiking neural network
- Built method for improving generalization in RL through regulation of Bayesian neural networks
- Leading development on automated speech recognition tool for children with speech impairments

University of California Los Angeles - Laboratory for Embedded Machines **LA, CA**

Masters of Science in Electrical and Computer Engineering *October 2020 – May 2022*

- Built end-to-end system for computationally designing fleet of unmanned underwater vehicles
- Developed distributed reinforcement learning solution for multi-agent path planning
- Worked with HCI researchers on studying the user interaction with designed tools

Cornell - Robotics in Groups Lab **Ithaca, NY**

Bachelor of Science in Computer Science *February 2016 – August 2018*

- Developed interface for socially assistive robots integrating facial tracking and audio localization
- Led a team of four undergraduates during the development of new socially interactive robots
- Created server and interface for remotely controlling robots during studies

WORK EXPERIENCE

Amazon Robotics **North Reading, MA**

Data Scientist & Software Engineer *June 2018 – October 2021*

- Utilized reinforcement learning policy techniques to improve sortation center throughput
- Developed adaptive sampling evolutionary algorithm for optimizing fulfillment center maps
- Designed and developed data compute engine and data lake using Elastic Map Reduce cluster
- Simulated new robotic solutions and calculated impact at fulfillment centers

Morgan Stanley Quantitative Finance **New York, NY**

Strategy and Modeling Summer Analyst *June 2017 – August 2017*

- Developed chat-bot assistant to facilitate traders' data processing using common language (NLP)
- Implemented hierarchical clustering algorithm to automate trade recommendations
- Conducted technical research for trade flow prediction based on client correlation algorithm

Suna Breakfast **Ithaca, NY**

Chief Technology Officer *February 2017 – May 2018*

- Built startup providing affordable breakfast delivery options to Cornell students
- Directed a 20-person team in building React Native applications and backend in AWS

ACTIVITIES AND PROJECTS

Dana Farber Cancer Institute **Boston, MA**
Pediatric Oncology Research Assistant *September 2019 – August 2020*
- Developed pipeline for automating analysis of chip-seq and RNA-seq data
- Interacted with team of scientists to build tools that speed up production of results

Autonomous Bicycle Project Team **Ithaca, NY**
Co-Founder and Software Team Lead *July 2016 – August 2018*
- Built object avoidance system using SLAM algorithm in ROS with TX-1 and ZED stereo camera
- Managed team of 12 students working to create centralized code structure across 4 sub-teams

National Atomic Energy Division (CNEA) **Bariloche, Argentina**
Instituto Balseiro - Undergraduate Researcher *June 2015 – August 2015*
- Studied and modeled radial fretting in prosthetic hips and tangential fretting in NiTi arch-wires
- Analyzed surface damage data through 3-D graphing and use of a scanning electron microscope

Awards and Achievements:
- *Meinig Family Cornell National Scholar*
- *Morgan Stanley Robert B. Fisher Scholar*
- Elected graduate student representative at the Institute of Neuroinformatics (2022-Present)

PUBLICATIONS & ORAL PRESENTATIONS

- **P Moure** , L Cheng, J Ott, Z Wang, SC Liu. "*Regularized Parameter Uncertainty for Improving Generalization in Reinforcement Learning*," IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2024.
- **P Moure***, T Pak* , J van Steveninck, SC Liu. "*End-to-end Optimization of Prosthetic Vision using a Hybrid Spiking Neural Network*" International Symposium on Circuits and Systems 2025 (in review)
- Z Wang, L Cheng, **P Moure**, N Hahn, SC Liu. "*DeltaDEQ: Exploiting Heterogeneous Convergence for Accelerating Deep Equilibrium Iterations,*" Neural Information Processing Systems (NeurIPS) 2025
- Z Wang, L Cheng, J Ott, **P Moure**, SC Liu. "*Bio-inspired parameter reuse: Exploiting inter-frame representation similarity*," UniReps Neural Information Processing Systems (NeurIPS) Workshop 2024
- C Liu, W Yan, **P Moure**, C Fan, A Mehta. "*A Computational Design and Evaluation Tool for 3D Structures with Planar Surfaces*," International Conference on Robotics and Automation (ICRA) 2021
- M Choueiri, S Duffy, S Guria, C McCarthy, **P Moure**, A Todalbagi, Y Wang, C de Aguiar, K Green. "*Can Interactive Systems Be Designed for Conviviality?*" ACM Conference on Designing Interactive Systems 2018
- **P Moure** - Presentation at Conference on Computer Vision and Pattern Recognition, 2024.
- J Granley*, **P Moure*** - Oral presentation at the Brain and the Chip 2024.