

EDUCATION	University of Montreal / Mila Ph.D. Computer Science <i>Advisor:</i> Dr. Pierre-Luc Bacon	May, 2022 - Present
	ETH Zurich (Eidgenössische Technische Hochschule) MSc. Robotics, Systems and Control <i>Advisor:</i> Prof. Dr. Andreas Krause <i>Thesis:</i> Safe Learning-based Control in High-dimensional Spaces	2018 - 2021
	Georgia Institute of Technology BSc. Electrical Engineering, Minor in Robotics, Co-op Rotation Graduated with Highest Honors <i>Thesis:</i> 3D Reconstruction of Live Chickens in Poultry Houses	2013 - 2018
ACADEMIC RESEARCH	Mila Research Institute <i>Advisor:</i> Dr. Pierre-Luc Bacon Visiting Student Researcher	Feb. 2021 - August 2021
	<ul style="list-style-type: none">Proposed algorithms to design synthetic antimicrobial peptides in high-dimensional molecular spaces using Meta Reinforcement Learning and Bayesian Optimization.	
	ETH Zurich <i>Advisor:</i> Prof. Dr. Andreas Krause <i>Safe Learning-Based Control in High-dimensional Spaces</i>	April 2020 - Jan. 2021
	<ul style="list-style-type: none">Implemented safe Bayesian optimization algorithm with sim-to-real approach for position control of quadrotors.Employed genetic algorithms to identify controllers that efficiently trade-off safety and performance.	
	ETH Zurich <i>Advisor:</i> Prof. Dr. Melanie Zeilinger <i>Safe Model-Based Reinforcement Learning</i>	Sept. 2019 - Jan. 2020
INDUSTRY EXPERIENCE	<ul style="list-style-type: none">Performed sample efficient learning using Thompson sampling and open-loop Model Predictive Control.Augmented model-based Reinforcement Learning with Scenario-based Optimization arguments to obtain safety-certified algorithms.	
	Georgia Institute of Technology <i>Advisor:</i> Dr. Fumin Zhang <i>GT-MAB: Miniature Autonomous Blimps</i>	May 2015 - April 2016
	<ul style="list-style-type: none">Performed system identification and developed PID controllers to control 3D motion of a robotic helium blimp.Nano Blimp: developed hardware and software for communication protocol for smaller version of blimp.	
	NNAISENSE, Lugano Research Intern	October 2021 - April 2022
	<ul style="list-style-type: none">Proposed transfer-learning approach to enable fast and efficient adaptation of Recurrent Neural Network models of dynamical systems.Designed Lyapunov-based safety certificates for formal verification of model-based Reinforcement Learning algorithms.	
	Georgia Tech Research Institute Co-op Intern: Robotics and Image Processing	Fall 2015, Spring 2016, Summer 2017
	<ul style="list-style-type: none">Implemented and deployed path-planning algorithms for an agricultural ground robot to autonomously navigate poultry houses.Collaborated with poultry scientist to develop novel obstacle (chicken) avoidance routines using point cloud data from Xbox Kinect.Designed Windows GUIs in C# to run a pedestrian tracking software and identify ideal road-crossing locations for the Georgia Department of Transport.	

PREPRINTS	<p>On the adaptation of recurrent neural networks for system identification. <i>Under Review: Automatica Journal.</i> (Available at: https://arxiv.org/abs/2201.08660). 2022. M. Forgione, A. Muni, D. Piga, M. Gallieri.</p>																				
PUBLICATIONS	<p>Designing Biological Sequences via Meta-Reinforcement Learning and Bayesian Optimization. <i>NeurIPS Workshop on Machine Learning in Structural Biology.</i> 2022. L. Feng, P. Nouri, A. Muni, Y. Bengio, P. Bacon.</p> <p>Autopilot Design for a class of Miniature Autonomous Blimps. <i>IEEE Conference on Control Technology and Applications. Pages:841-846.</i> 2017. S. Cho, V. Mishra, Q. Tao, P. Varnell, M. King-Smith, A. Muni, W. Smallwood, F. Zhang.</p> <p>Robotics for Poultry House Management. <i>ASABE Annual International Meeting. 1701103.(doi:10.13031/aim.201701103).</i> 2017. C. T Usher, W. D Daley, B. P Joffe and A. Muni.</p> <p>Control Theory – Autonomous Blimp. <i>IEEE Control Systems Society Video Contest. Available Online: YouTube video.</i> 2015. Q. Tao, M. King-Smith, A.D. Muni, V. Mishra, S. Cho, J.P. Varnell, F. Zhang.</p>																				
TALKS	<p>Opening the Black Box: High-dimensional Safe Policy Search via Sim-to-Real. <i>16th Workshop for Women in Machine Learning (WiML), NeurIPS 2021.</i> A. Muni, M. Turchetta, A. Krause.</p> <p>Learning-Based Control for Constrained Systems using Thompson Sampling and Scenario Optimization. <i>Machine Learning Summer School (MLSS), Tübingen. 2020.</i> Available: YouTube video. A. Muni, K. Wabersich, M. Zeilinger.</p> <p>3D Reconstruction of Live Chickens in Poultry Houses. <i>13th Annual Undergraduate Research Spring Symposium, Georgia Tech. 2018.</i> A. Muni and Colin Usher.</p>																				
HONORS AND AWARDS	<table> <tr> <td>Navigation Challenge Winner, Montreal Robotics Summer School</td><td>2022</td></tr> <tr> <td>Kyunghyun Cho Diversity Award, Mila</td><td>2022</td></tr> <tr> <td>UdeM Tuition Exemption Scholarship for International Students</td><td>2022</td></tr> <tr> <td>NeurIPS Travel Grant, WiML Workshop</td><td>2021</td></tr> <tr> <td>Best Oral Presentation, 3rd position, Undergraduate Research Symposium</td><td>Spring 2018</td></tr> <tr> <td>Best Overall Design Award, <i>MLH MakeHarvard</i> Hackathon</td><td>Spring 2018</td></tr> <tr> <td>3x President's Undergraduate Research Award</td><td>2018, 2016, 2015</td></tr> <tr> <td>ThinkSwiss Research Scholarship</td><td>Summer 2017</td></tr> <tr> <td>James G. and Mary G. Wohlford Co-op Scholarship</td><td>Spring 2017</td></tr> <tr> <td>IEEE Control System Society Video Contest, 3rd position</td><td>Summer 2015</td></tr> </table>	Navigation Challenge Winner , Montreal Robotics Summer School	2022	Kyunghyun Cho Diversity Award, Mila	2022	UdeM Tuition Exemption Scholarship for International Students	2022	NeurIPS Travel Grant, WiML Workshop	2021	Best Oral Presentation, 3 rd position, Undergraduate Research Symposium	Spring 2018	Best Overall Design Award, <i>MLH MakeHarvard</i> Hackathon	Spring 2018	3x President's Undergraduate Research Award	2018, 2016, 2015	ThinkSwiss Research Scholarship	Summer 2017	James G. and Mary G. Wohlford Co-op Scholarship	Spring 2017	IEEE Control System Society Video Contest, 3 rd position	Summer 2015
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