AMIN SOLEIMANI ABYANEH

aminabyaneh@gmail.com

EDUCATION

McGill University *September 2021 – present*
Ph.D., Electrical and Computer Engineering, Robotics — GPA: 4/4

Sharif University of Technology *September 2015 – Feb 2020*
Bachelor of Science, Electrical Engineering, Digital Systems — GPA: 3.7/4
Minor Program, Computer Science — GPA: 3.8/4

SELECTED PUBLICATIONS

Abyaneh A, et al. Globally Stable Neural Imitation Policies. *Published* at International Conference on Robotics and Automation (ICRA) 2024.

Abyaneh A, Lin HC. Learning Lyapunov-Stable Polynomial Dynamical Systems Through Imitation. *Published* at the 7th Annual Conference on Robot Learning (CoRL), 2023 Aug 30.

TECHNICAL SKILLS

Programming Languages	Python, C, C++, Java, partial knowledge of R, Julia, and bash.
Knowledge & Tools	Statistical Learning, Data-Driven Control, Reinforcement Learning, Robot Learning, Imitation Learning, Model Predictive Control, Deep Learning, Digital System Design, Kinematics and Dynamics, Embedded Systems, System Identification, Motion Planning, Distributed Systems, Manipulation, Domain Randomization.
Tools	ROS, PyBullet, Isaac Sim, Isaac Lab, Matlab, Kinova (Link-6, Jaco2, Gen3), Franka (Panda), Anybotics (ANYmal C).

PROFESSIONAL EXPERIENCE

Researcher, École Polytechnique Fédérale de Lausanne (EPFL) *April 2024 – present*
Robust imitation learning for out of distribution recovery using implicit layers such as neural ordinary differential equations coupled with control barrier and Lyapunov functions and contraction theory.

MITACS Research Collaborator, Sycodal Electronics Inc. *Nov 2023 – present*
Safe and robust reinforcement learning applied to industrial manipulation applications by domain randomization in Isaac Gym, and customized environment design in Isaac Sim.

Visiting Researcher, Max Planck Institute for Intelligent Systems *January 2021 – 2022*
Development of agent-based probabilistic simulation of COVID-19 spread pattern to find the most effective contraction policies.

Research Intern at Max Planck Institute for Intelligent Systems *July 2019 – October 2019*
Implementation of model-free reinforcement learning to control a 6 DOF manipulator platform.

Embedded Systems Specialist at Fanap Co. *April 2018 – July 2019*
Developing secure payment applications on Linux-Arm based embedded systems that are currently being used by more than 400,000 customers countrywide.

Research Assistant at Artificial Creatures Lab, Sharif University *July 2018 – December 2019*
Working on smart vertical farming, as a B.Sc. thesis. The project is about automation of vertical farming exploiting convolutional neural networks, fuzzy controllers, and embedded systems.

Research Assistant at Mechatronics Lab, Sharif University *July 2017 – October 2018*
Building an autonomous racing platform aiming at evaluation and benchmarking of control algorithms.

AWARDS

Fonds de recherche du Québec (FRQ)   April 2024
4-year fellowship awarded to distinguished PhD candidates in Quebec.

NCCR Automation Fellowship   January 2024
Awarded by the Swiss National Centers of Competence in Research to selected international researchers.

MITACS Accelerate Fellowship   September 2023
Awarded by MITACS Canada to conduct high-caliber research with an industrial partner.

Thomas and Penelope Deirdre Szirtes Fellowships in Engineering (SFE)   September 2022
Awarded by the Faculty of Engineering on the basis of academic merit to graduate students.

McGill Engineering Doctoral Award (MEDA)   September 2020
A competitive scholarship with an acceptance rate of below 2 percent for direct entries.

McGill Graduate Excellence Fellowship (GEF)   September 2020, 2021
Winning the award for two consecutive years due to excellent academic performance.

Max-Planck Society Research Scholarship   March 2021
The award for independent research for visiting and international doctorate students.

Novelty Award for B.Sc. Thesis, Sharif University   March 2020
The award goes to B.Sc. thesis demonstrating a degree of novelty in design, deployment etc.

Fellowship of Iran's National Elites Foundation   September 2015
Dedicated to the top 0.05 percent of Iran's university entrance exam participants.

TEACHING EXPERIENCE

Teaching assistant (McGill): Applied Robotics, Intelligent Robotics, Linear Systems

Head teaching assistant (Sharif): Digital Circuits & Computer Architecture, Machine Learning

REVIEWS

IEEE Robotics and Automation Letters 2024 (RAL) IEEE International Conference on Robotics and Automation 2023, 2024 (ICRA)

Conference on Robots and Vision 2023, 2024 (CRV)

IEEE-RAS 2023 International Conference on Humanoid Robots (Humanoids)

LANGUAGE

Test of English as a Foreign Language (TOEFL), Score: 111 out of 120.

Basic knowledge of French (A2)

VOLUNTARY ACTIVITY

2-year Member of CSGS; Computer science graduate society at McGill university.

2-year Member of Setak NGO, countering child labor and helping victims access proper education.

Organizer of 2017 Hackathon at Sharif University; Student-organized event to accelerate start-ups.

4-year Member of Resana; Student society of the Electrical Engineering department at Sharif university.