Manfred Diaz

Ph.D. Candidate | Mila, University of Montreal

Website | *Github* | *Email* | *LinkedIn* | *Google Scholar*
Montreal, Quebec, Canada

Education

Sep 2018 Dec 2024	Ph.D. in Computer Science, University of Montreal, Montreal, Quebec, Canada with Prof. Liam Paull.
Sep 2016 Aug 2018	M.Sc. in Computer Science, Concordia University, Montreal, Quebec, Canada with Prof. Thomas Fevens and Prof. Liam Paull.
Sep 2005 Jul 2010	B.Sc. in Computer Science, Universidad de las Ciencias Informáticas, Habana, Cuba with Prof. Eddy Sanchez.

Work Experience

Oct 2023 April 2024	**AI Resident	Google X** Large language models for supply chain understanding, optimization, and control.	Mountain View, CA
Jun 2022 Sept 2022	**Research Intern	J.P Morgan AI Research** with Joshua Lockhart on explainable AI and concept-based explanations.	London, UK
May 2021 July 2021	**Research Intern	Motional Inc** with Eric Wolff on motion planning, behaviour prediction, and graph representation learning for autonomous driving.	Boston, MA
May 2019 Aug 2019	**Research Intern	Huawei Canada** with Jun Luo and Peyman Jadmellat on behaviour prediction and graph representation learning for autonomous driving.	Markham, ON
June 2018 Aug 2018	**Deep Learning Intern	Mila, University of Montreal** with Prof. Liam Paull on imitation learning and sim-to-real transfer for autonomous driving.	Montreal, QC
Jun 2017 Aug 2017	**Software Engineer Intern	Manu3Lab, Anatomi Metrix** on computer vision, real-time camera calibration, and video streaming.	Montreal, QC
Sep 2016 Jan 2018	**Visiting Researcher	Shared Reality Lab, McGill University** with Prof. Jeremy Cooperstock on navigation, assistive technologies, and imitation learning.	Montreal, QC
July 2015 Jan 2016	**Lead Software Developer	H3alth Technologies Inc** on sensor acquisition, points cloud registration, 3D reconstruction.	Quito, EC (remote)
Oct 2014 Apr 2017	**Lead Software Developer	GoMentr Inc** on web technologies, single-page applications, Grails Framework.	Quito, EC (remote)
Sep 2010 June 2014	**Software Architect	Universidad de las Ciencias Informáticas** on desktop technologies, .NET Framework, distributed systems.	Havana, Cuba
Jun 2007 Aug 2010	**Software Engineer Intern Co-Op	Universidad de las Ciencias Informáticas** on desktop technologies, .NET Framework, distributed systems	Havana, Cuba

Publications

2024 Joel Z. Leibo, Alexander S. Vezhnevets, **Manfred Diaz**, John P Agapiou, William A Cunningham, Peter Sunehag, Julia Haas, Raphael Koster, Edgar A Duéñez-Guzmán, William S Isaac, Georgios Piliouras, Stanley M Bileschi, Iyad Rahwan, Simon Osindero. A theory of appropriateness with applications to generative artificial intelligence. [preprint]

2024 **Manfred Diaz**, Joel Z. Leibo, and Liam Paull. Milnor-Myerson Games and The Principles of Artificial Principal-Agent Problems. Finding the Frame: An RLC Workshop for Examining Conceptual Frameworks [paper]

2024 Marc Lanctot, Kate Larson, Michael Kaisers, Quentin Berthet, Ian Gemp, **Manfred Diaz**, Roberto-Rafael Maura-Rivero, Yoram Bachrach, Anna Koop, and Doina Precup. *Soft Condorcet Optimization for Ranking of General Agents*. Autonomous Agents and Multi-Agent Systems, 2025 [preprint] [paper]

2024 **Manfred Diaz**, Liam Paull, and Andrea Tacchetti. *Rethinking Teacher-Student Curriculum Learning under the Cooperative Mechanics of Experience*. Transactions on Machine Learning Research. 2024. [paper] [preprint]

2022 **Manfred Diaz**, Charlie Gauthier, Glen Berseth and Liam Paull. *Generalization Games for Reinforcement Learning*. Gamification and Multiagent Solutions Workshop, ICLR 2022. [paper]

2021 Shixiang Shane Gu, **Manfred Diaz**, C Daniel Freeman, Hiroki Furuta, Seyed Kamyar Seyed Ghasemipour, Anton Raichuk, Byron David, Erik Frey, Erwin Coumans and Olivier Bachem. *Braxlines: Fast and Interactive Toolkit for RL-driven Behavior Generation Beyond Reward Maximization.* [paper] [code]

2021 **Manfred Diaz**, Liam Paull, and Pablo Samuel Castro. *LOCO: Adaptive Exploration in Reinforcement Learning via Local Estimation of Contraction Coefficients*. Self-supervision for Reinforcement Learning Workshop, ICLR 2021. [paper]

2021 **Manfred Diaz**, Thomas Fevens, and Liam Paull. *Uncertainty-Aware Policy Sampling and Mixing for Safe Interactive Imitation Learning.* 18th Conference on Robots and Vision 2021 (*Oral*). [paper] [code]

2020 **Manfred Diaz***, Bhairav Mehta* and Pablo Samuel Castro. *Bisimulation-Inducing Graph Neural Networks*. ELLIS Workshop on Geometric and Relational Deep Learning. April 2020. [preprint]

2020 Bhairav Mehta, **Manfred Diaz**, Florian Golemo, Christopher J. Pal, and Liam Paull. *Active Domain Randomization and Safety-Critical Few-Shot Learning*. [preprint] [code]

2019 Bhairav Mehta, **Manfred Diaz**, Florian Golemo, Christopher J. Pal, and Liam Paull. *Active Domain Randomization*. Proceedings of the Conference on Robot Learning, PMLR 100:1162-1176, 2020. [paper] [code]

2018 Julian Zilly, Jacopo Tani, Breandan Considine, Bhairav Mehta, Andrea F. Daniele, **Manfred Diaz**, Gianmarco Bernasconi, Claudio Ruch, Jan Hakenberg, Florian Golemo, A. Kirsten Bowser, Matthew R. Walter, Ruslan Hristov, Sunil Mallya, Emilio Frazzoli, Andrea Censi, Liam Paull. The AI Driving Olympics at NeurIPS 2018. The NeurIPS'18 Competitions, pp 37-68. [paper]

2017 **Manfred Diaz***, Roger Girgis*, Thomas Fevens, and Jeremy Cooperstock. *To Veer or Not to Veer: Learning from Experts How to Stay Within the Crosswalk.* In 2017 IEEE International Conference on Computer Vision Workshop (ICCVW), pp. 1470-1479. IEEE, 2017. (*Oral*) [paper]

2011 **Manfred Diaz**. *Integración de sistemas de gestión de emergencias con tecnologías móviles*. In the Ninth Latin American and Caribbean Conference, LACCEI 2011 [paper]

Workshops, Sessions and Competitions Co-Organized

2022-	Multi-Agent Learning Seminar	[website]
2021	BIG-Gym: A Crowd-Sourcing Challenge for RL Environments and Behaviours	[website]
2021	NeurIPS Workshop on Ecological Theory of Reinforcement Learning	[website]
2019	AI-DO: The AI Driving Olympics at NeurIPS 2019	[website]
2019	AI-DO: The AI Driving Olympics at ICRA 2019	[website]
2018	AI-DO: The AI Driving Olympics at NeurIPS 2018	[website]

Honours And Awards

2018	DIRO Excellence Award, University of Montreal
2017	NSERC Create Award, Surgical Innovation, McGill University
2016	Surgical Innovation Fellow, McGill University
2010	Dean List, Summa Cum Laude, Universidad de las Ciencias Informáticas, Cuba
2006	Bronze Medal, Cuban Inter-College Informatics Contest
2003-2004	Bronze Medal, Cuban National Informatics Contest

Outreach, Inclusion and Volunteering

2018-	Reviewer NeurIPS, ICLR, CoRL, ICRA, ICML
2020-2022	Mentor, LatinX in AI (3 students mentored)
2018-2020	Duckietown Robotics Outreach with ETH Zurich, TTIC, Brown University and NCTU

Talks

2022	Mila RL Sofa. Generalization Games for Reinforcement Learning. [video]
2022	Berkeley Multi-agent Learning Seminar. Generalization Games for Reinforcement Learning.
2018	Concordia University, Uncertainty-Aware Interactive Imitation Learning.
2018	Montreal AI Symposium, Duckietown: A Platform for Teaching Robotics and Machine Learning Research. [video]
2017	Workshop on Assistive Computer Vision and Robotics, ICCV 2017: To Veer or Not to Veer: Learning from Experts How to Stay Within the Crosswalk.

Teaching Experience

2018	Teaching Assistant, IFT 6757 Autonomous Vehicles, University of Montreal
2017	Teaching Assistant, Emerging Technologies in HCI, Concordia University