

Daniele Reda

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last updated: March 2025

EDUCATION

University of British Columbia

PhD in Computer Science

September 2019 – January 2025
Vancouver, BC, CA

- Thesis: Physics-based character controllers with reinforcement learning
- Advisor: Michiel Van de Panne
- Topic: Reinforcement Learning, Representation Learning, Control, Physics-based Simulation, Character Animation

Telecom ParisTech - Eurecom Research Center

Master of Science in Computer Science

September 2016 – April 2018
Sophia Antipolis, FR

Polytechnic University of Turin

Master of Science in Computer Engineering, with honors

September 2015 – April 2018
Turin, IT

- Thesis: Non-invasive markers for the detection of truth telling in surveys through statistical modelling

Polytechnic University of Turin

Bachelor of Science in Computer Engineering

September 2012 – July 2015
Turin, IT

EXPERIENCE

Wayve AI

Research Scientist

September 2024 - current
Vancouver BC, CA

- Driving Policies, Reward Modeling, Reinforcement Learning, World Modeling

Sanctuary AI

Research Scientist Intern

August 2023 - December 2023
Vancouver BC, CA

- Reinforcement Learning for grasping and manipulation control policies

Meta Reality Labs - Research (previously Facebook/Oculus Research)

Research Scientist Intern

May 2022 - December 2022
Sausalito, CA, US

- Physics-based Character Animation for the Metaverse using Deep Reinforcement Learning

Inverted AI

PhD Student Researcher

May 2020 - May 2021
Vancouver, BC, CA

- MITACS scholarship between UBC and Inverted AI with Frank Wood
- Conditional Variational Methods for Stochastic Belief Modeling of Realistic Human Behaviors in Autonomous Driving

University of British Columbia

Graduate Student

September 2019 - ongoing
Vancouver, BC, CA

- Graduate Student Researcher
- Teaching Assistant for different courses, see Teaching section below

Wayve AI

Reinforcement learning Research Engineer

May 2018 – June 2019
Cambridge, UK

- Reinforcement learning on autonomous vehicles

University of California, Berkeley

Visiting Research Scholar at Berkeley AI Research Lab (BAIR)

August 2017 – February 2018
Berkeley, CA, US

- Research scholar with professor Ruzena Bajcsy working on statistical models for truth telling recognition

PUBLICATIONS

- [1] Nicholas Ioannidis, **Daniele Reda**, Setareh Cohan, and Michiel van de Panne. Diffusion-based planning with learned viability filters, 2025.
- [2] Guy Tevet, Sigal Raab, Setareh Cohan, **Daniele Reda**, Zhengyi Luo, Xue Bin Peng, Amit H Bermano, and Michiel van de Panne. Closs: Closing the loop between simulation and diffusion for multi-task character control. *ICLR*, 2025. Webpage at <https://guytevet.github.io/CLoSD-page/>.
- [3] Setareh Cohan, Guy Tevet, **Daniele Reda**, Xue Bin Peng, and Michiel van de Panne. Flexible motion in-betweening with diffusion models. *ACM SIGGRAPH*, 2024. Webpage at <https://setarehc.github.io/CondMDI/>.
- [4] Alexis Jensen, Thomas Chatagnon, Niloofar Khoshsiyar, **Daniele Reda**, Michiel Van De Panne, Charles Pontonnier, and Julien Pettr . Physical simulation of balance recovery after a push. In *ACM SIGGRAPH MIG*, 2023.
- [5] **Daniele Reda**, Jungdam Won, Yuting Ye, Michiel van de Panne, and Alexander Winkler. Physics-based motion retargeting from sparse inputs. In *22nd ACM SIGGRAPH SCA*, 2023. Webpage at <https://www.cs.ubc.ca/~dreda/retargeting.html>.
- [6] Tianxin Tao, **Daniele Reda**, and Michiel van de Panne. Evaluating vision transformer methods for deep reinforcement learning from pixels. *ICRA Workshop on Scaling Robot Learning*, 2022.
- [7] **Daniele Reda**, Hung Yu Ling, and Michiel van de Panne. Learning to brachiate via simplified model imitation. *ACM SIGGRAPH*, 2022. Webpage at <https://brachiation-rl.github.io/brachiation>.
- [8] Adam Scibior, Vasileios Lioutas, **Daniele Reda**, Peyman Bateni, and Frank Wood. Imagining the road ahead: Multi-agent trajectory prediction via differentiable simulation. *International Conference on Intelligent Transportation (ITSC)*, 2021. Also BEST PAPER AWARD at CVPR Workshop on Autonomous Driving: Perception, Prediction and Planning, 2021.
- [9] **Daniele Reda**, Tianxin Tao, and Michiel van de Panne. Learning to locomote: Understanding how environment design matters for deep reinforcement learning. In *Proc. ACM SIGGRAPH MIG*, 2020. Webpage at <https://www.cs.ubc.ca/~van/papers/2020-MIG-envdesign>.
- [10] Jeffrey Hawke*, Richard Shen*, Corina Gurau*, Siddharth Sharma*, **Daniele Reda***, Nikolay Nikolov*, Przemyslaw Mazur*, Sean Micklethwaite*, Nicolas Griffiths*, Amar Shah*, and Alex Kendall*. Urban driving with conditional imitation learning. *ICRA*, 2020. Blog post at <https://wayve.ai/blog/learned-urban-driving>.
- [11] Wayve AI Research Team. Learning to drive in imagination. *Published as a blog post at <https://wayve.ai/blog/dreaming-about-driving-imagination-rl>*, 2018.
- [12] Alex Kendall, Jeffrey Hawke, David Janz, Przemyslaw Mazur, **Daniele Reda**, John-Mark Allen, Vinh-Dieu Lam, Alex Bewley, and Amar Shah. Learning to drive in a day. *ICRA*, 2019. Blog post at <https://wayve.ai/blog/l2diad>.

TEACHING

Object-Oriented Programming: Spring Term, 2016
CPSC 422 Intelligent Systems: Winter Term 1, 2019
IVADO/MILA/DSI Deep Learning Winter School 5th Edition: December 2019
DSCI 572 Supervised Learning II: Winter Term 2, 2020
DSCI 563 Unsupervised Learning: Winter Term 2, 2020
DSCI 575 Advanced Machine Learning: Winter Term 2, 2020
WON THE MDS TA AWARD: Winter Term 2, 2020
CPSC 533V Learning to Move - Reinforcement Learning: Winter Term 2, 2020
CPSC 340 Machine Learning and Data Mining: Winter Term 2, 2021

6th IVADO/MILA Deep Learning School: April 2021

CPSC 533V Learning to Move - Reinforcement Learning: Winter Term 1, 2022)

CPSC 533V Learning to Move - Reinforcement Learning: Winter Term 2, 2024)

SKILLS

Computer Languages: Python, Java, C

Human Languages: English, Italian, Spanish, French

Technologies: PyTorch, GitHub, L^AT_EX, ROS and others

Soft skills: communication and leadership skills, organizational and team working skills, 7+ years of volunteering