Daniele Reda

X660, 2366 Main Mall, V6T 1Z4, Vancouver, BC, CANADA

dreda@cs.ubc.ca
cs.ubc.ca/∼dreda

Education

University of British Columbia — September 2019 – Summer 2023 (expected)
PhD in Computer Science — Vancouver, BC, CA

- Advisor: Michiel Van de Panne
- Topic: Reinforcement Learning, Representation Learning, Control, Simulation, Character Animation

Telecom ParisTech - Eurecom Research Center — September 2016 – April 2018
Master of Science in Computer Science — Sophia Antipolis, FR

Polytechnic University of Turin — September 2015 – April 2018
Master of Science in Computer Engineering, with honors — Turin, IT

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

Polytechnic University of Turin — September 2012 – July 2015
Bachelor of Science in Computer Engineering — Turin, IT

Experience

Meta Reality Labs - Research (previously Facebook/Oculus Research) — May 2022 - December 2022
Research Scientist Intern — Sausalito, CA, US

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

Inverted AI — May 2020 - May 2021
PhD Student Researcher — Vancouver, BC, CA

- MITACS scolarship 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 — September 2019 - ongoing
Graduate Student — Vancouver, BC, CA

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

Wayve.AI — May 2018 – June 2019
Reinforcement learning Research Engineer — Cambridge, UK

- Reinforcement learning on autonomous vehicles

University of California, Berkeley — August 2017 – February 2018
Visiting Research Scholar at Berkeley AI Research Lab (BAIR) — Berkeley, CA, US

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

Publications

[1] 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.

[2] **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.

[3] 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.

[4] **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 Conference on Motion, Interaction and Games*, 2020. Webpage at https://www.cs.ubc.ca/~van/papers/2020-MIG-envdesign.

[5] 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.

[6] 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.

Other Projects

Learning to Drive in Imagination 2018

- We demonstrate a model-based algorithm trained solely in imagination drive and generalize to multiple weathers in the real-world.
- Blog post: https://wayve.ai/blog/dreaming-about-driving-imagination-rl

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)

Skills

Computer Languages: Python, Java, C
Human Languages: English, Italian, French, Spanish
Technologies: PyTorch, GitHub, LaTeX, ROS and others
Soft skills: communication and leadership skills, organizational and team working skills, 7+ years of volunteering