Quentin Le Lidec

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Education

2019 – 2020 **ENS Paris-Saclay,** Master MVA — *Paris, France*
Master on Mathematics, Computer Vision and Machine Learning
Key subjects studied: Convex Optimization, Theoretical foundations of Deep Learning, Kernel methods, Computer Vision, Reinforcement Learning

2016 – 2019 **Ecole Polytechnique,** Master of Science (Cycle ingénieur polytechnicien) — *Paris, France*
Key subjects studied: Computer Science (Algorithms design and analysis, Concurrent Computing, Machine Learning), Maths (Advanced Probabilities and Statistics, Operational Research, Optimal Control) , Physics (advanced quantum physics, relativity, variational principles and analytical mechanics)

Research experience

Since Apr 2020 **Inria,** WILLOW team, PhD student — *Paris, France*
Under the supervision of Justin Carpentier, Ivan Laptev and Cordelia Schmid.
Worked on differentiable simulation and applications to robotics manipulation and locomotion. Developed efficient C++ implementations in the Pinocchio and Simple open-source differentiable physics libraries.

Apr – Jul 2019 **Université de Montreal,** Department of Mathematics, Research Intern — *Montreal, Canada*
Studied classical MCMC sampling algorithms and worked on extensions of Metropolis-Hastings algorithm.

Service

Reviewer: NeurIPS, ICML, RSS, ICRA, IROS, T-RO, RA-L, L4DC

Workshops: Organized *"Differentiable optimization everywhere: Simulation, Estimation, Learning and Control"* at CoRL

Teaching: Teaching assistant of Prof Alexandre d'Aspremont for "Convex optimization" course at MSc MVA, ENS Paris-Saclay.

Publications

Le Lidec Quentin*, Montaut Louis*, de Mont-Marin Yann* and Carpentier Justin (2024). *End-to-End and Highly-Efficient Differentiable Simulation for Robotics.* Preprint.

Carpentier Justin***, Le Lidec Quentin***, Montaut Louis* (2024). *From Compliant to Rigid Contact Simulation: a Unified and Efficient Approach.* Robotics: Science and Systems (RSS)

Montaut Louis, **Le Lidec Quentin**, Petrík Vladimir, Sivic Josef, and Carpentier Justin (2022). *GJK++: Leveraging Acceleration Methods for Faster Collision Detection.* IEEE Transactions on Robotics(T-RO)

Le Lidec Quentin, Jallet Wilson, Montaut Louis, Laptev Ivan, Schmid Cordelia, and Carpentier Justin (2023). *Contact Models in Robotics: a Comparative Analysis.* IEEE Transactions on Robotics (T-RO)

Le Lidec Quentin, Jallet, Wilson, Laptev, Ivan, Schmid, Cordelia, and Carpentier, Justin (2023). *Enforcing the consensus between Trajectory Optimization and Policy Learning for precise robot control.* IEEE International Conference on Robotics and Automation (ICRA)

Montaut Louis, **Le Lidec Quentin**, Bambade Antoine, Petrik Vladimir, Sivic Josef, and Carpentier Justin (2023). *Differentiable Collision Detection: a Randomized Smoothing Approach.* IEEE International Conference on Robotics and Automation (ICRA)

Le Lidec Quentin, Montaut Louis, Schmid Cordelia, Laptev Ivan, and Carpentier Justin (2022). *Augmenting differentiable physics with randomized smoothing.* Robotics Science and Systems (RSS), Workshop on Differentiable Simulation For Robotics

Montaut Louis, **Le Lidec Quentin**, Petrík Vladimir, Sivic Josef, and Carpentier Justin (2022). *Collision Detection Accelerated: An Optimization Perspective.* Robotics: Science and Systems (RSS)

Le Lidec Quentin, Montaut Louis, Schmid Cordelia, Laptev Ivan, and Carpentier Justin (2021). *Leveraging Randomized Smoothing for Optimal Control of Nonsmooth Dynamical Systems.* Nonlinear Analysis: Hybrid Systems (NAHS)

Le Lidec Quentin, Laptev, Ivan, Schmid, Cordelia, and Carpentier, Justin (2021). *Differentiable rendering with perturbed optimizers.* Advances in Neural Information Processing Systems (NeurIPS)

Le Lidec Quentin, Kalevatykh Igor, Laptev Ivan, Schmid Cordelia, and Carpentier Justin (2021). *Differentiable simulation for physical system identification.* IEEE Robotics and Automation Letters (RA-L)