September 24, 2025

Dear Professor Sabatelli,

I am hereby applying to a Bachelor's thesis under your supervision with the topic "*On the Existence of Double-Descent in Reinforcement Learning*". I am keen to test whether—and how—double descent manifests in RL, where non-stationarity, policy-induced distribution shift, and environment stochasticity complicate the well-known phenomenon from supervised learning. Considering the recent commercial advances in reinforcement learning, I am excited to contribute to the published scholarly discourse. My goal is a careful, reproducible empirical study, with the ambition of an RLC-quality submission.

I believe I am prepared to deliver solid and rigorous work on this topic. While I am only taking the Reinforcement Learning course this block, I am enjoying it so far and am keen to learn more about the algorithms that power the most influential tools in the world currently. I have a strong background in supervised learning, including passing courses such as Introduction to Machine Learning (8.5), Uncertainty in Machine Learning (9.5), and Applied Machine Learning (9.5), where I developed a plant disease image classifier with 99.8% accuracy. I am on track to complete my Bachelor's Degree *cum laude* and am planning to uphold the same academic rigor in my Bachelor's thesis. Furthermore, I am currently employed as a Python/ML developer at descript GmbH (Dresden/remote), where I design reproducible training pipelines (PyTorch, scikit-learn), run ablations, and ship production code (Django). Given my background in deep learning, RL coursework, HPC experimentation, and reproducible MLOps, I'm confident I can execute this super-duper challenging project and aim for a strong RLC submission.

Thank you for your time and consideration. I look forward to your response and to take on this "super-duper challenging" project!

Sincerely,

Richard Harnisch