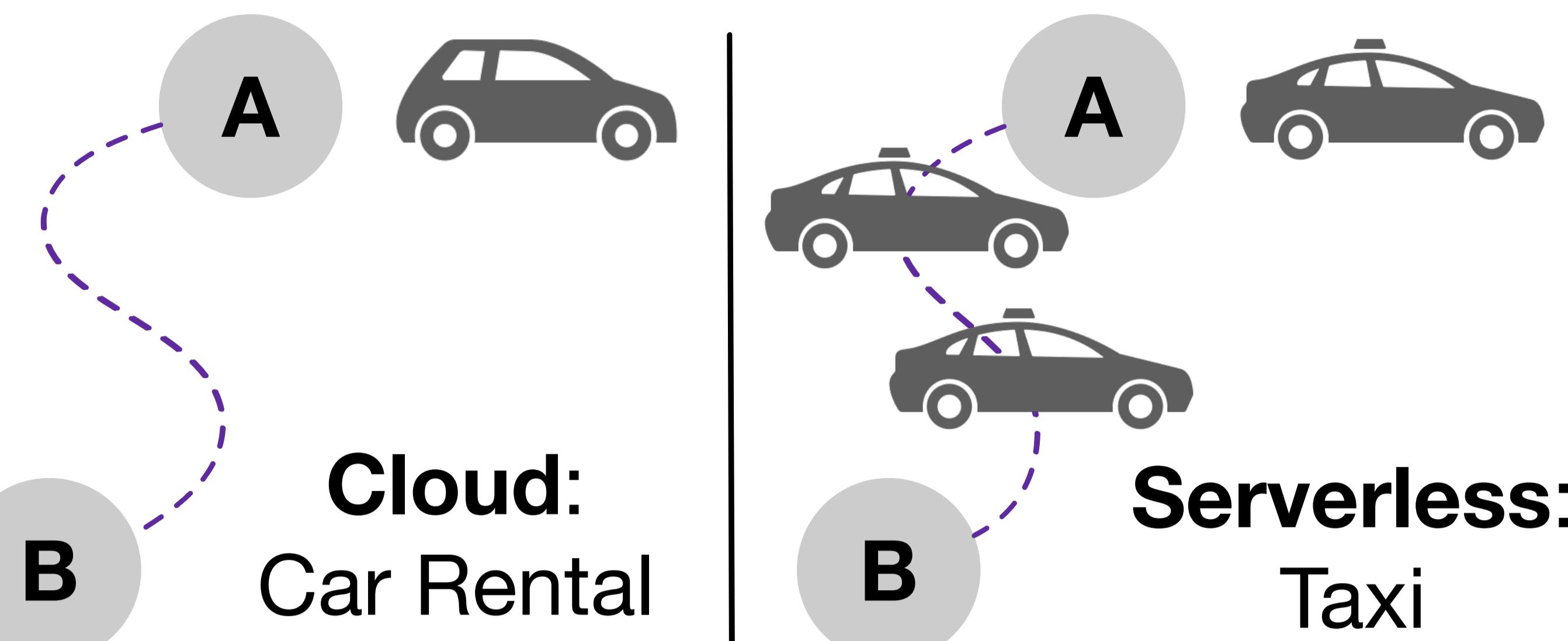


Nitro: Boosting Distributed Reinforcement Learning with Serverless Computing

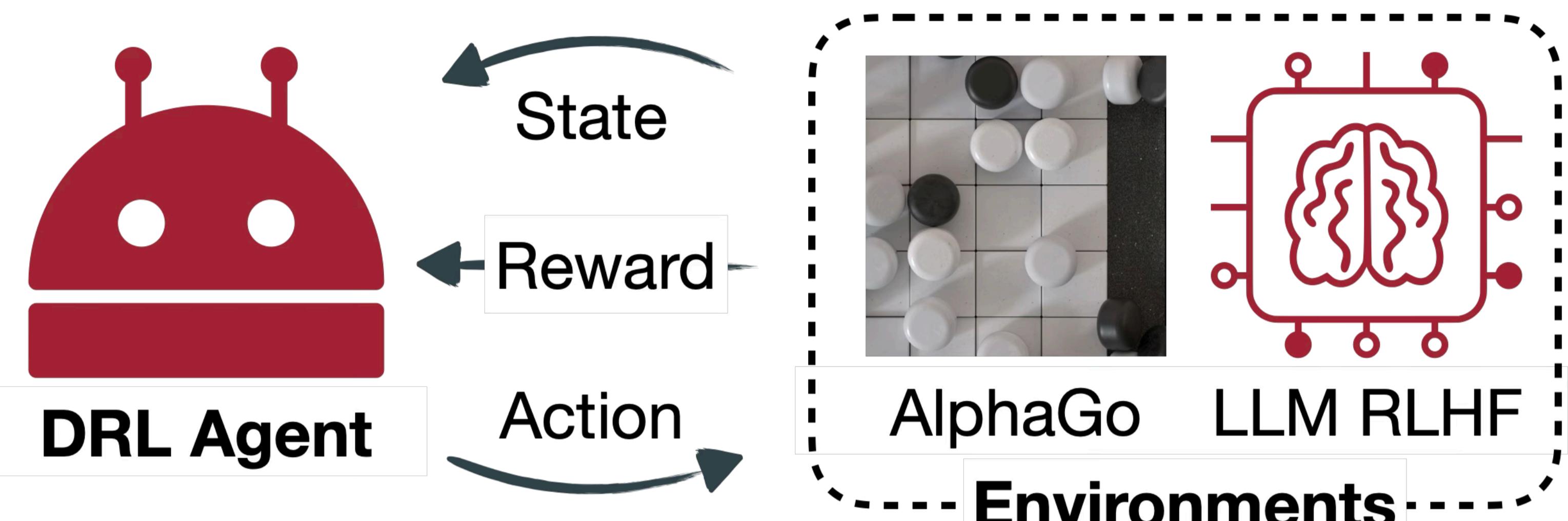
Hanfei Yu¹, Jacob Carter², Hao Wang¹, Devesh Tiwari³, Jian Li⁴, Seung-Jong Park⁵

Stevens Institute of Technology¹, Louisiana State University², Northeastern University³,
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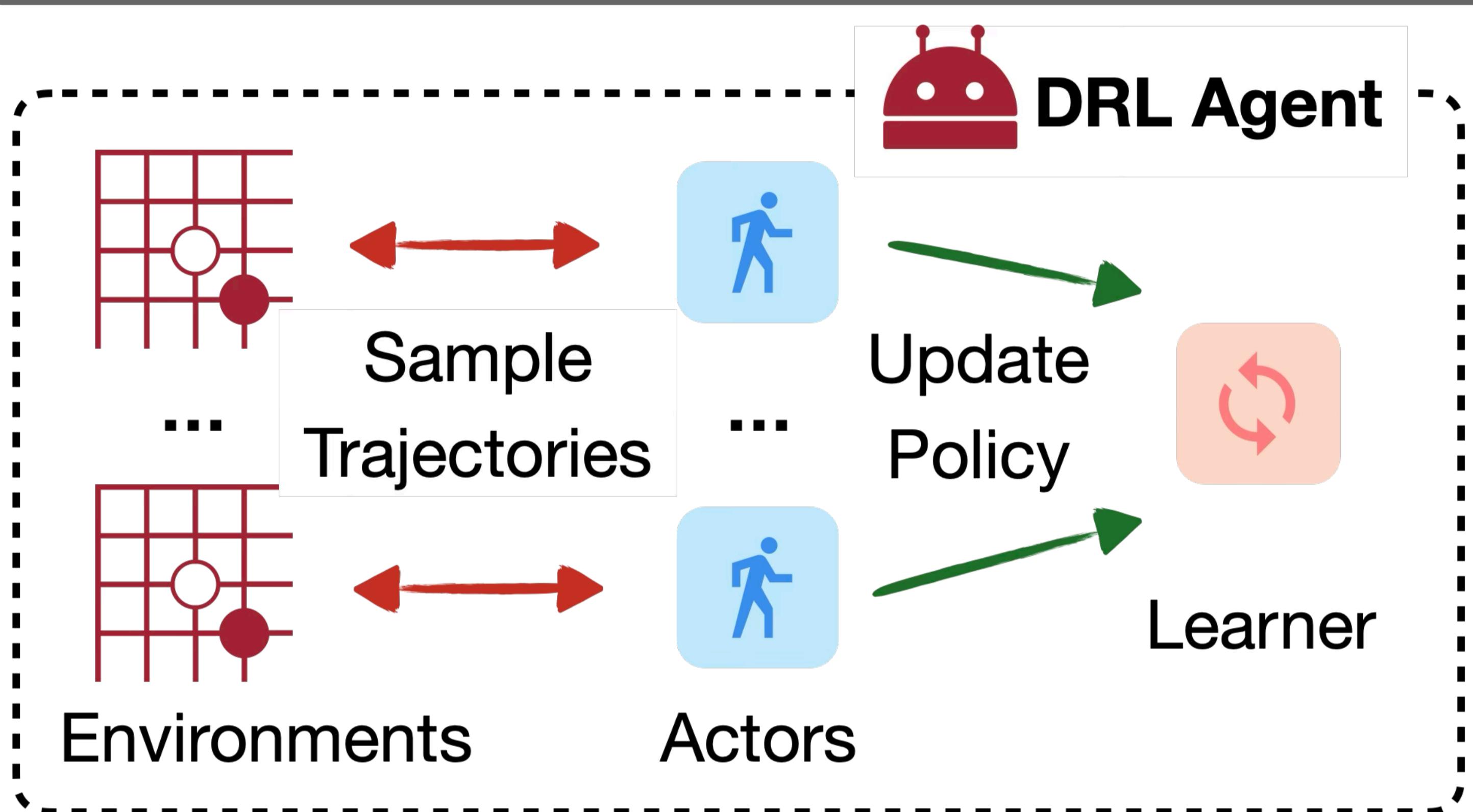
1. Cloud vs. Serverless Computing



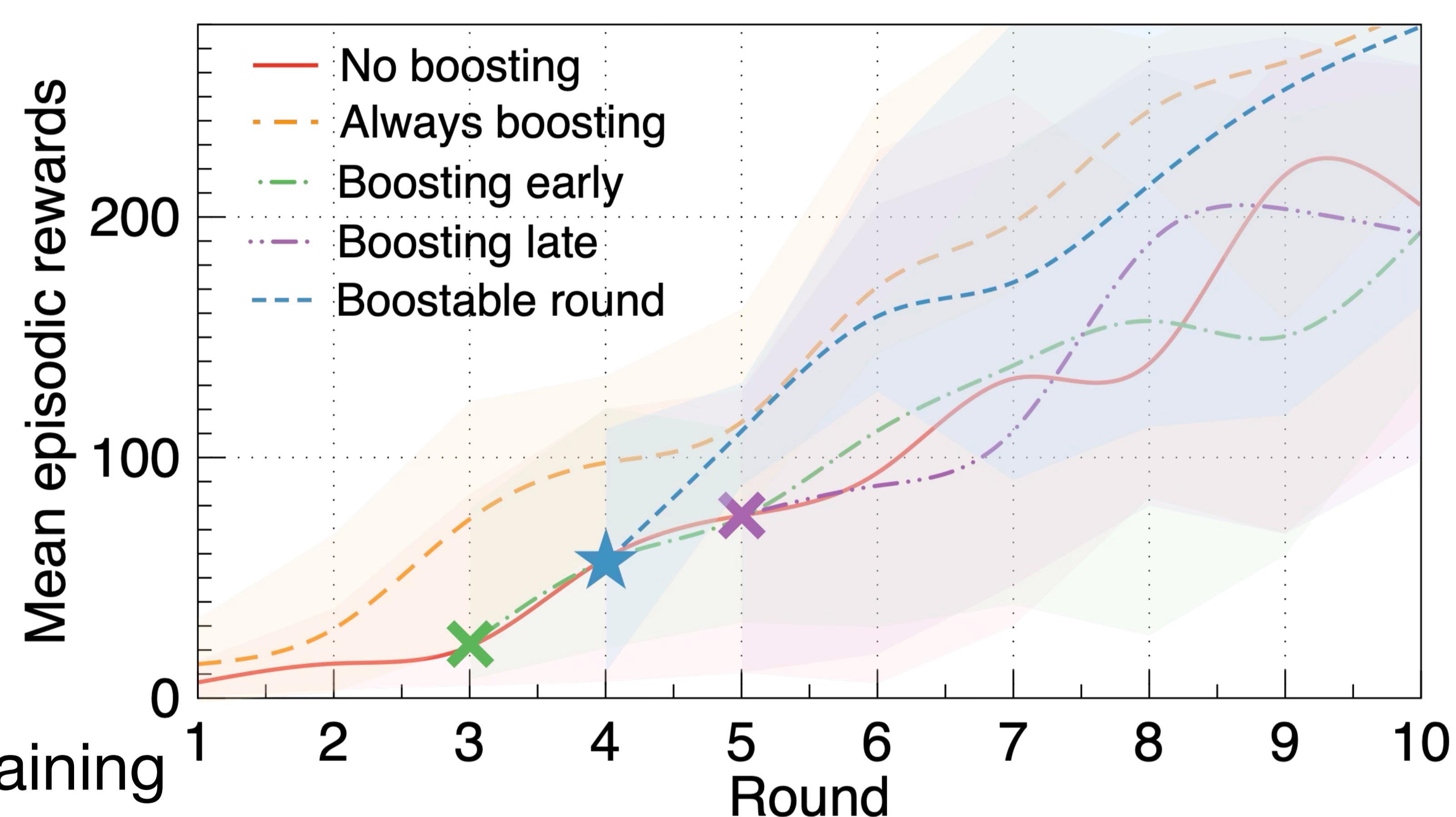
2. Deep Reinforcement Learning (DRL)



3. Actor-Learner Architecture

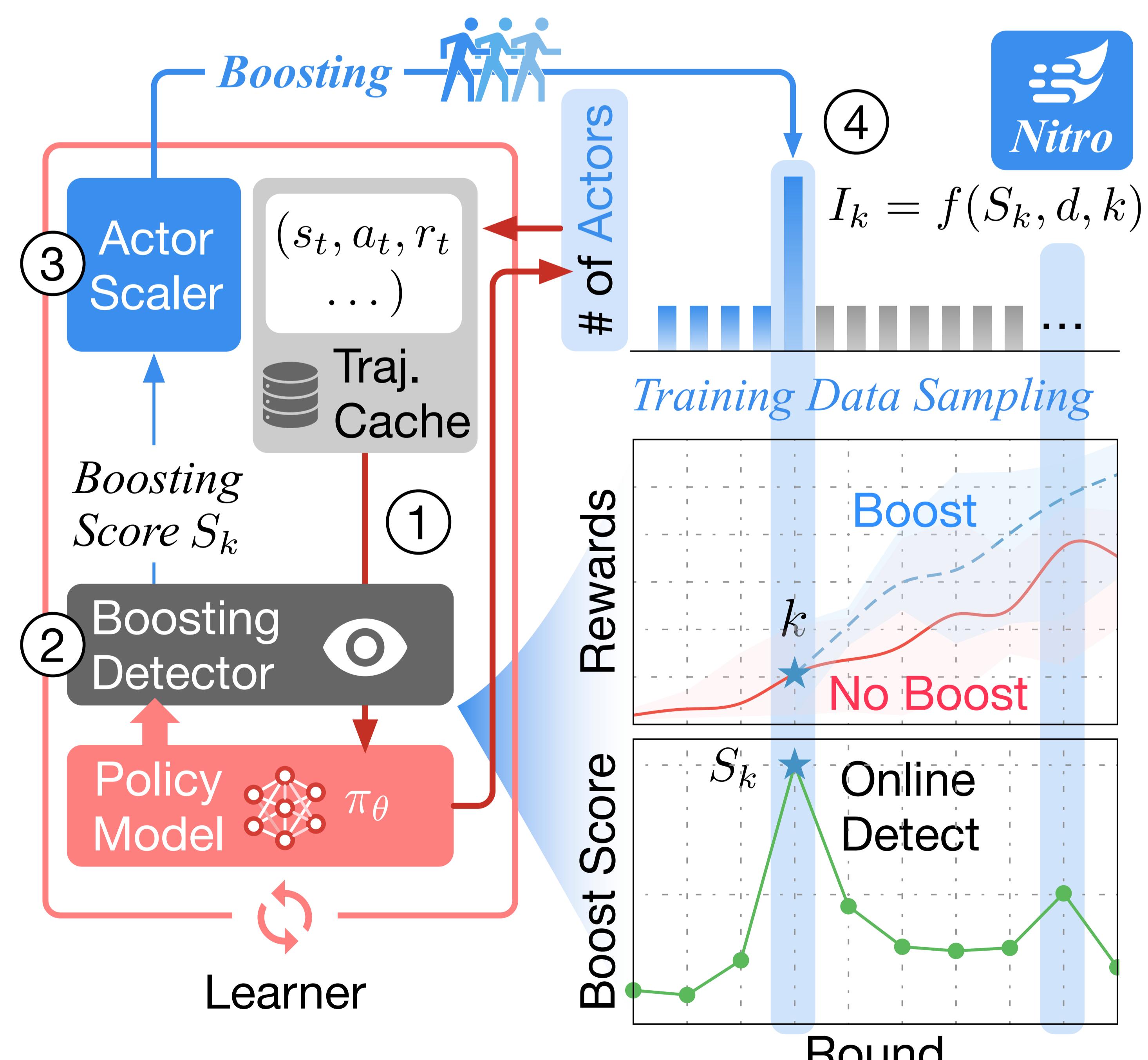


4. Boosting Distributed DRL Training

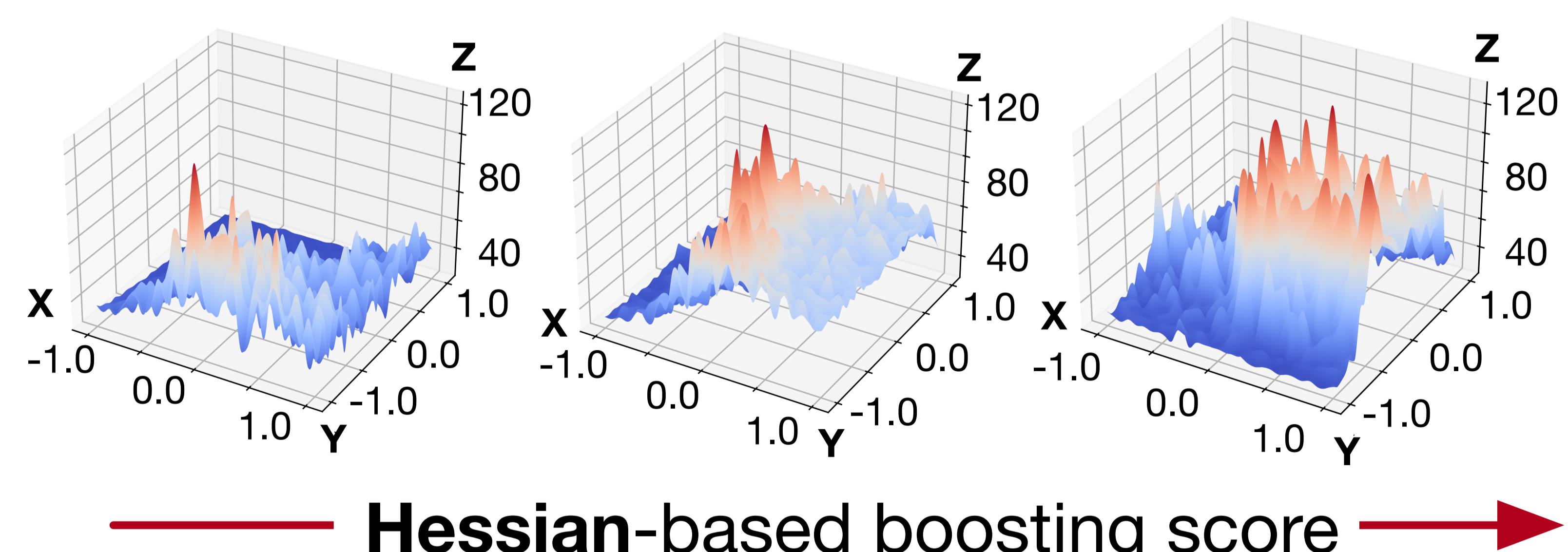


Boosting: increase actors to speed up DRL training

5. Nitro's Workflow and Actor Scaling

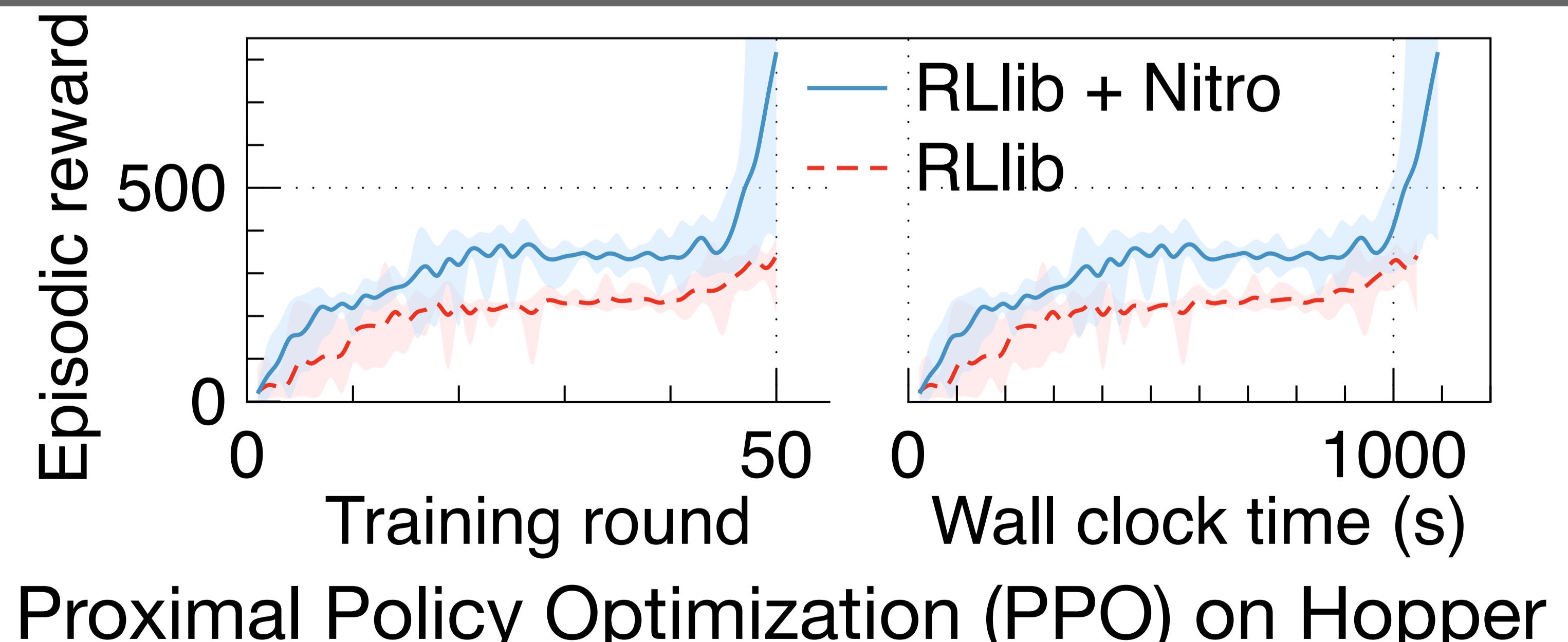


6. Boosting Opportunity Detection



Hessian-based boosting score →

7. DRL Training Improvement



Proximal Policy Optimization (PPO) on Hopper



IntelliSys Lab

