2nd collaboration workshop on Reinforcement Learning for Autonomous Accelerators (RL4AA'24)



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Learning to Do or Learning While Doing: Reinforcement Learning and Bayesian Optimisation for Online Continuous Tuning

In the pursuit of optimising particle accelerators, the choice of method for autonomous tuning is critical for enhancing performance and operational efficiency. This study delves into comparing deep reinforcement learning-trained optimisers (RLO) and Bayesian optimisation (BO) for this purpose, motivated by the need to address the complex, dynamic nature of accelerators. Through simulation and real-world applications at the ARES accelerator at DESY, the research assesses RLO's adaptability and speed against BO's deployment simplicity. The findings illuminate the trade-offs involved in selecting an optimisation method, offering guidance on balancing performance improvements with practical deployment considerations in particle accelerator tuning.

Possible contributed talk

No

Are you a student?

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