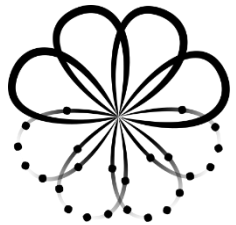

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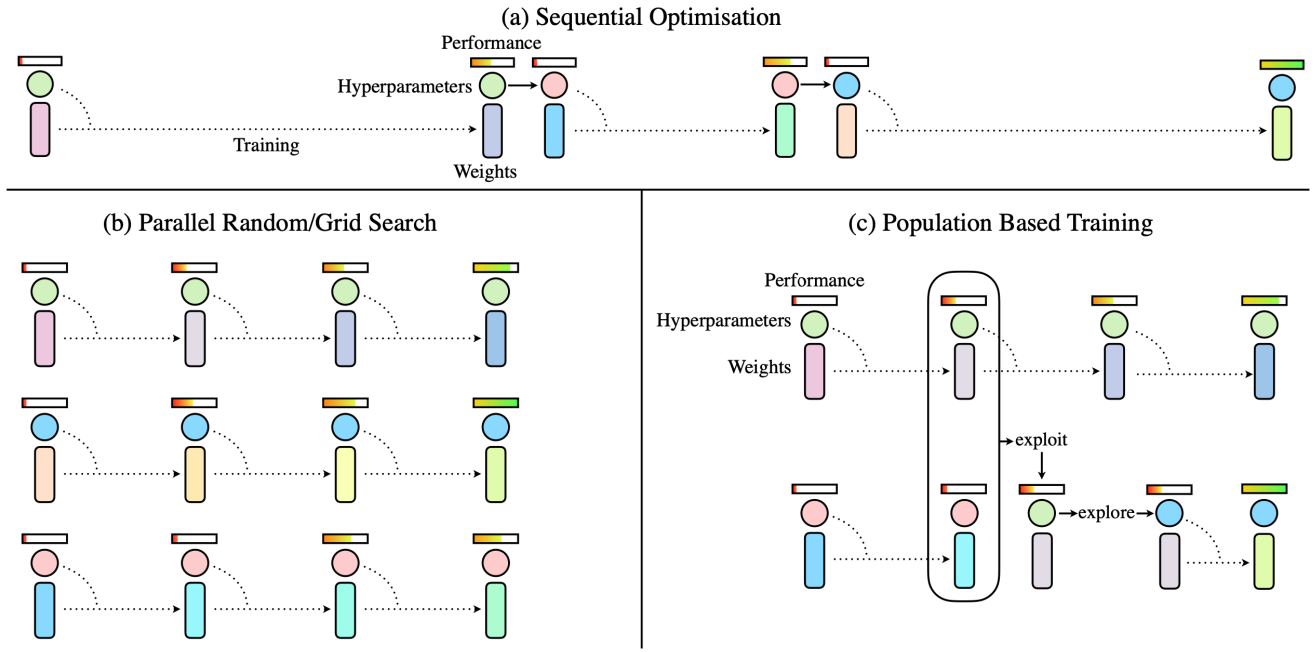
Population Based Training of Neural Networks [JDO+17]

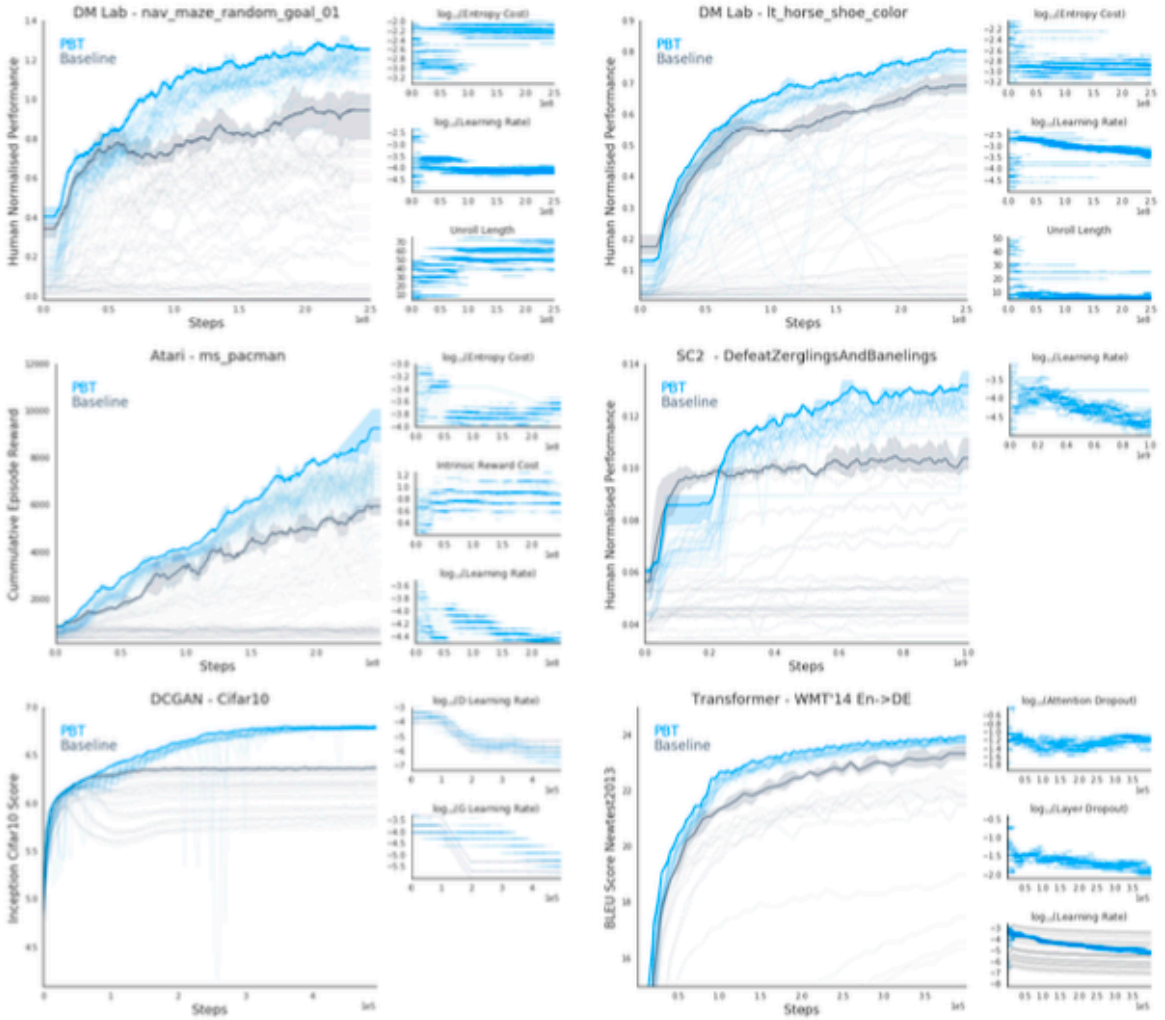
Optimization approaches [JDO+17]

- In order to overcome the sensitivity of design choices during training, a PBT approach is introduced
- Has less initial runs and is parallel
- If underperforming: exploit better mo
- If performing good: explore new HPs



[JDO+17]

Comparison to other approaches



Optimization Approach	PBT	Random Search	Grid Search
Training	Trains multiple agents parallel	Eval on independent configs	Eval on independent configs
Evaluation	Evaluates at each period before training is continued	Evaluates after training is done	Evaluates after training is done
Exploration - Exploitation	Balances trade-off by exploring new HPs	Explores	Explores
Complexity	More complex due to dynamic nature and adaptivity	Simple to implement and to compute	Computationally more demanding, easy to implement

[JDO+17]

Sources

[JDO+17] https://arxiv.org/pdf/1711.09846