

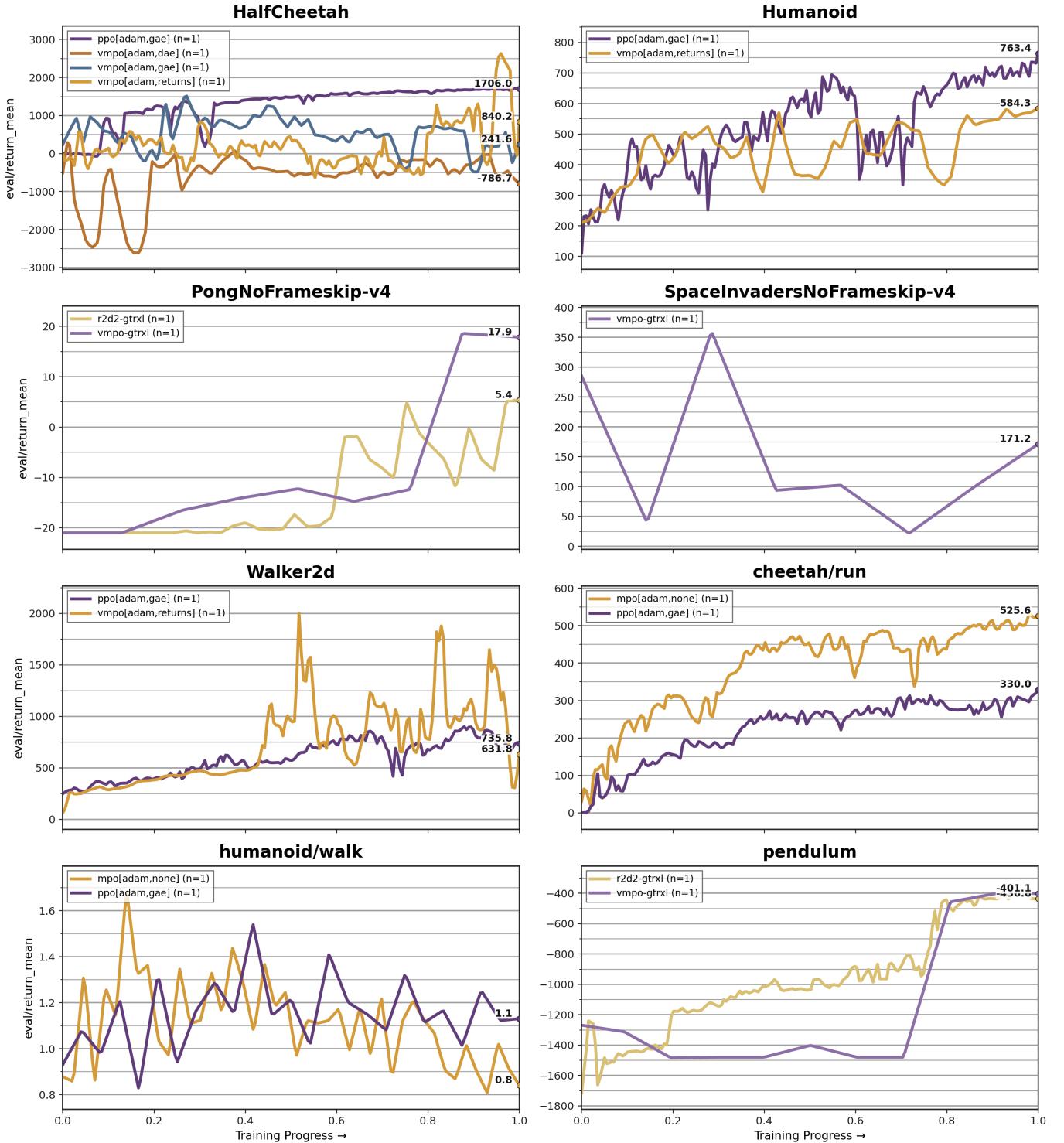
# Contents

<b>Report: adrian-research/minerva-rl-benchmark-7</b>	<b>1</b>
Hyperparameters by Algorithm . . . . .	3
<code>mpo</code> . . . . .	3
<code>ppo</code> . . . . .	3
<code>vmpo</code> . . . . .	4

## Report: adrian-research/minerva-rl-benchmark-7

- Generated: 2026-02-15 15:44:45
- Included runs: 17 (`_step > 1000`)
- Algorithm key source: run config `command`
- Environment key source: run config `env` + `optimizer_type` + `advantage_estimator`
- Metric: `eval/return_mean`

## Environment Curves



Each line is a time-weighted average across runs for a single environment/optimizer/advantage-type and algorithm. Every run timeline is normalized to [0, 1].

Max achieved table (eval/return\_max, fallback to selected metric), reported as max +/- std across runs.

Environment	mpo	ppo	r2d2-gtrxl	vmpo	vmpo-gtrxl
HalfCheetah[adam,dae]	-	-	-	-485.4 +/- 0.0	-

Environment	mpo	ppo	r2d2-gtrxl	vmpo	vmpo-gtrxl
HalfCheetah[adam,gae]	-	1819.0 +/- 0.0	-	553.1 +/- 0.0	-
HalfCheetah[adam,returns]	-	-	-	1746.4 +/- 0.0	-
Humanoid[adam,gae]	-	1413.6 +/- 0.0	-	-	-
Humanoid[adam,returns]	-	-	-	939.7 +/- 0.0	-
PongNoFrameskip-v4	-	-	11.0 +/- 0.0	-	18.0 +/- 0.0
SpaceInvadersNoFrameskip-v4	-	-	-	-	175.0 +/- 0.0
Walker2d[adam,gae]	-	1013.6 +/- 0.0	-	-	-
Walker2d[adam,returns]	-	-	-	1165.7 +/- 0.0	-
cheetah/run[adam,gae]	-	438.4 +/- 0.0	-	-	-
cheetah/run[adam,none]	530.9 +/- 0.0	-	-	-	-
humanoid/walk[adam,gae]	-	2.1 +/- 0.0	-	-	-
humanoid/walk[adam,none]	2.0 +/- 0.0	-	-	-	-
pendulum	-	-	-3.1 +/- 0.0	-	-3.0 +/- 0.0

## Hyperparameters by Algorithm

Rows are hyperparameters and columns are environments. If multiple runs differ for a cell, values are listed together.

### mpo

Hyperparameter	cheetah/run[adam,none]	humanoid/walk[adam,none]
action_penalization	False	False
action_samples	32	256
batch_size	128	512
critic_layer_sizes	[512,512,256]	[512,512,256]
device	None	None
epsilon_penalty	0.001	0.001
gamma	0.995	0.995
kl_epsilon	0.2	0.1
lambda_init	1	1
lambda_lr	0.0003	0.0003
max_grad_norm	1	1
mstep_kl_epsilon	0.3	0.1
optimizer_type	adam	adam
per_dim_constraining	False	True
policy_layer_sizes	[256,256,256]	[256,256,256]
policy_lr	0.0003	0.0003
q_lr	0.0003	0.0003
replay_size	1000000	1000000
retrace_lambda	0.95	0.95
retrace_mc_actions	8	8
retrace_steps	2	2
seed	42	42
sgd_momentum	0.9	0.9
target_critic_update_period	100	100
target_policy_update_period	50	100
temperature_init	1	1
temperature_lr	0.0003	0.0003
total_steps	400000	400000
update_after	1000	1000
updates_per_step	1	2
use_retrace	False	True

### ppo

Environments 1-4 of 5.

Hyperparameter	HalfCheetah[adam,gae]	Humanoid[adam,gae]	Walker2d[adam,gae]	cheetah/run[adam,gae]
advantage_estimator	-	-	-	-
anneal_lr	True	True	True	True
clip_ratio	0.2	0.2	0.2	0.2
clip_vloss	True	True	True	True
critic_layer_sizes	[512,512,256]	[512,512,256]	[512,512,256]	[512,512,256]
device	None	None	None	None
ent_coef	0	0	0	0
gae_lambda	0.92	0.92	0.92	0.92
gamma	0.98	0.98	0.98	0.98
max_grad_norm	0.8	0.8	0.8	0.8
minibatch_size	32	32	32	32
norm_adv	True	True	True	True
normalize_obs	True	True	True	True
num_envs	1	1	1	1
optimizer_type	adam	adam	adam	adam
policy_layer_sizes	[256,256,256]	[256,256,256]	[256,256,256]	[256,256,256]
policy_lr	0.0002	0.0002	0.0002	0.0002
rollout_steps	2048	2048	2048	2048
seed	42	42	42	42

Hyperparameter	HalfCheetah[adam,gae]	Humanoid[adam,gae]	Walker2d[adam,gae]	cheetah/run[adam,gae]
sgd_momentum	0.9	0.9	0.9	0.9
target_kl	0	0	0	0
total_steps	500000	500000	500000	500000
update_epochs	10	10	10	10
vf_coef	0.5	0.5	0.5	0.5

Environments 5-5 of 5.

Hyperparameter	humanoid/walk[adam,gae]
advantage_estimator	None
anneal_lr	True
clip_ratio	0.2
clip_vloss	True
critic_layer_sizes	[512,512,256]
device	None
ent_coeff	0
gae_lambda	0.92
gamma	0.98
max_grad_norm	0.8
minibatch_size	32
norm_adv	True
normalize_obs	True
num_envs	1
optimizer_type	adam
policy_layer_sizes	[256,256,256]
policy_lr	0.0002
rollout_steps	2048
seed	42
sgd_momentum	0.9
target_kl	0
total_steps	500000
update_epochs	10
vf_coef	0.5

## vmpo

Environments 1-4 of 5.

Hyperparameter	HalfCheetah[adam,dae]	HalfCheetah[adam,gae]	HalfCheetah[adam,returns]	Humanoid[adam,returns]
advantage_estimator	dae	gae	returns	returns
alpha_lr	0.0003	0.0003	0.0003	0.0003
device	None	None	None	None
epsilon_eta	0.25	0.25	0.25	0.05
epsilon_mu	0.05	0.05	0.05	0.05
epsilon_sigma	0.001	0.001	0.001	0.0003
gae_lambda	0.95	0.95	0.95	0.95
gamma	0.99	0.99	0.99	0.995
max_grad_norm	1	1	1	1
normalize_advantages	True	True	True	True
num_envs	1	1	1	1
optimizer_type	adam	adam	adam	adam
policy_layer_sizes	[256,256,256]	[256,256,256]	[256,256,256]	[256,256,256]
policy_lr	0.0002	0.0002	0.0002	0.0001
rollout_steps	1024	1024	1024	4096
seed	42	42	42	42
sgd_momentum	0.9	0.9	0.9	0.9
temperature_init	2	2	2	1
temperature_lr	0.001	0.001	0.001	0.0002
topk_fraction	0.45	0.45	0.45	0.4
total_steps	3000000	3000000	3000000	3000000
updates_per_step	1	1	1	1
value_layer_sizes	[512,512,256]	[512,512,256]	[512,512,256]	[512,512,256]
value_lr	0.0003	0.0003	0.0003	0.0001

Environments 5-5 of 5.

Hyperparameter	Walker2d[adam,returns]
advantage_estimator	returns
alpha_lr	0.0001
device	None
epsilon_eta	0.25
epsilon_mu	0.05
epsilon_sigma	0.001
gae_lambda	0.95
gamma	0.99

Hyperparameter	Walker2d [adam, returns]
max_grad_norm	1
normalize_advantages	True
num_envs	1
optimizer_type	adam
policy_layer_sizes	[256,256,256]
policy_lr	0.0001
rollout_steps	4096
seed	42
sgd_momentum	0.9
temperature_init	1
temperature_lr	0.001
topk_fraction	0.4
total_steps	3000000
updates_per_step	1
value_layer_sizes	[512,512,256]
value_lr	0.0003