

File - main

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1 C:\Users\Salvo\AppData\Local\Microsoft\WindowsApps\python3.8.exe "C:/Users/Salvo/GitHub/MicroRacer_Corinaldesi_Fiorilla
- Copy/ppo/main.py"
2 2022-01-31 14:47:48.837877: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic
library 'cudart64_110.dll'; dlsym: cudart64_110.dll not found
3 2022-01-31 14:47:48.838032: I tensorflow/stream_executor/cuda/cudart_stub.cc:29] Ignore above cudart dlsym if you do
not have a GPU set up on your machine.
4 2022-01-31 14:47:52.419478: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic
library 'cudart64_110.dll'; dlsym: cudart64_110.dll not found
5 2022-01-31 14:47:52.419746: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic
library 'cublas64_11.dll'; dlsym: cublas64_11.dll not found
6 2022-01-31 14:47:52.420002: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic
library 'cublasLt64_11.dll'; dlsym: cublasLt64_11.dll not found
7 2022-01-31 14:47:52.420256: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic
library 'cufft64_10.dll'; dlsym: cufft64_10.dll not found
8 2022-01-31 14:47:52.432452: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic
library 'curand64_10.dll'; dlsym: curand64_10.dll not found
9 2022-01-31 14:47:52.432972: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic
library 'cusolver64_11.dll'; dlsym: cusolver64_11.dll not found
10 2022-01-31 14:47:52.433485: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic
library 'cusparse64_11.dll'; dlsym: cusparse64_11.dll not found
11 2022-01-31 14:47:52.433996: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic
library 'cudnn64_8.dll'; dlsym: cudnn64_8.dll not found
12 2022-01-31 14:47:52.434263: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1835] Cannot dlopen some GPU libraries.
Please make sure the missing libraries mentioned above are installed properly if you would like to use GPU. Follow the
guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your platform.
13 Skipping registering GPU devices...
14 2022-01-31 14:47:52.435111: I tensorflow/core/platform/cpu_feature_guard.cc:142] This TensorFlow binary is optimized
with oneAPI Deep Neural Network Library (oneDNN) to use the following CPU instructions in performance-critical
operations: AVX AVX2
15 To enable them in other operations, rebuild TensorFlow with the appropriate compiler flags.
16 loading NN from: saved_model
17 CURRENT ACTOR-CRITIC NETWORK IN USE
18 Model: "ActorNet"
19 -----
20 Layer (type)          Output Shape         Param #  Connected to
21 -----
22 input_1 (InputLayer) [(None, 5)]          0
23
24 acc_1 (Dense)        (None, 128)          768      input_1[0][0]
25
26 dir_1 (Dense)        (None, 128)          768      input_1[0][0]
27
28 acc_2 (Dense)        (None, 128)          16512    acc_1[0][0]
29
30 dir_2 (Dense)        (None, 128)          16512    dir_1[0][0]
31
32 acc_3 (Dense)        (None, 128)          16512    acc_2[0][0]
33
34 dir_3 (Dense)        (None, 128)          16512    dir_2[0][0]
35
36 acc_out_mu (Dense)  (None, 1)             129      acc_3[0][0]
37
38 dir_out_mu (Dense)  (None, 1)             129      dir_3[0][0]
39
40 concatenate (Concatenate) (None, 2)          0        acc_out_mu[0][0]
41                                         dir_out_mu[0][0]
42 -----
43 Total params: 67,842
44 Trainable params: 67,842
45 Non-trainable params: 0
46
47 Model: "CriticNet"
48 -----
49 Layer (type)          Output Shape         Param #
50 -----
51 input_2 (InputLayer) [(None, 5)]          0
52
53 layer_1 (Dense)      (None, 128)          768
54
55 layer_2 (Dense)      (None, 128)          16512
56
57 layer_3 (Dense)      (None, 128)          16512
58
59 dense (Dense)        (None, 1)             129
60
61 Total params: 33,921
62 Trainable params: 33,921
63 Non-trainable params: 0
64
65 Started Training ...
66 Hyperparameters:
67 Actor_lr 3e-05. Critic_lr 0.0001. clip_value 0.1. N_epochs 100. steps_per_epoch 4096. train_iteraion 50.
target_mean_diff 0.0225.
68 2022-01-31 14:47:53.686264: I tensorflow/compiler/mlir/mlir_graph_optimization_pass.cc:185] None of the MLIR
Optimization Passes are enabled (registered 2)
69 2022-01-31 14:47:53.744444: W tensorflow/core/grappler/optimizers/loop_optimizer.cc:907] Skipping loop optimization for
Merge node with control input: direction_norm/assert_greater/Assert/AssertGuard/branch_executed/_57
70 completed
71 completed
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72 completed
73 completed
74 completed
75 completed
76 2022-01-31 14:48:10.469654: W tensorflow/core/grappler/optimizers/loop_optimizer.cc:907] Skipping loop optimization for
    Merge node with control input: StatefulPartitionedCall/acceleration_norm/assert_greater/Assert/AssertGuard/
    branch_executed/_468
77 2022-01-31 14:48:14.541742: W tensorflow/python/util/util.cc:348] Sets are not currently considered sequences, but this
    may change in the future, so consider avoiding using them.
78 Epoch: 1. UP Best ! Mean Return: 0.582615077495575. Trajectories: 28. Mean Length: 146.28571428571428.
79 completed
80 completed
81 completed
82 completed
83 completed
84 completed
85 completed
86 Epoch: 2. DOWN      Mean Return: 0.5694049596786499. Trajectories: 28. Mean Length: 146.28571428571428.
87 completed
88 completed
89 completed
90 completed
91 completed
92 completed
93 Epoch: 3. UP Best ! Mean Return: 0.928021252155304. Trajectories: 25. Mean Length: 163.84.
94 completed
95 completed
96 completed
97 completed
98 completed
99 completed
100 completed
101 Epoch: 4. DOWN      Mean Return: 0.6079370379447937. Trajectories: 29. Mean Length: 141.24137931034483.
102 completed
103 completed
104 completed
105 completed
106 completed
107 completed
108 completed
109 Epoch: 5. UP Best ! Mean Return: 1.771366000175476. Trajectories: 22. Mean Length: 186.1818181818182.
110 completed
111 completed
112 completed
113 completed
114 completed
115 completed
116 completed
117 completed
118 completed
119 Epoch: 6. UP Best ! Mean Return: 2.0320208072662354. Trajectories: 21. Mean Length: 195.04761904761904.
120 completed
121 completed
122 completed
123 completed
124 completed
125 completed
126 Epoch: 7. DOWN      Mean Return: 0.849570631980896. Trajectories: 25. Mean Length: 163.84.
127 completed
128 completed
129 completed
130 completed
131 completed
132 completed
133 completed
134 Epoch: 8. UP      Mean Return: 1.9727752208709717. Trajectories: 20. Mean Length: 204.8.
135 completed
136 completed
137 completed
138 completed
139 completed
140 completed
141 completed
142 Epoch: 9. DOWN      Mean Return: 1.2153018712997437. Trajectories: 25. Mean Length: 163.84.
143 completed
144 completed
145 completed
146 completed
147 completed
148 completed
149 completed
150 completed
151 completed
152 saving models
153 Epoch: 10. UP Best ! Mean Return: 2.493314266204834. Trajectories: 18. Mean Length: 227.55555555555554.
154 completed
155 completed
156 completed
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158 completed
159 completed
160 completed
161 completed
162 completed
163 Epoch: 11. UP Best ! Mean Return: 3.5266003608703613. Trajectories: 16. Mean Length: 256.0.
164 completed
165 completed
166 completed
167 completed
168 completed
169 completed
170 completed
171 completed
172 completed
173 Epoch: 12. DOWN      Mean Return: 2.2190074920654297. Trajectories: 21. Mean Length: 195.04761904761904.
174 completed
175 completed
176 completed
177 completed
178 completed
179 completed
180 Epoch: 13. DOWN      Mean Return: 1.8659688234329224. Trajectories: 19. Mean Length: 215.57894736842104.
181 completed
182 completed
183 completed
184 completed
185 completed
186 completed
187 completed
188 completed
189 completed
190 Epoch: 14. UP Best ! Mean Return: 4.171798229217529. Trajectories: 14. Mean Length: 292.57142857142856.
191 completed
192 completed
193 completed
194 completed
195 completed
196 Epoch: 15. DOWN      Mean Return: 1.276592493057251. Trajectories: 22. Mean Length: 186.1818181818182.
197 completed
198 completed
199 completed
200 completed
201 completed
202 completed
203 completed
204 Epoch: 16. UP      Mean Return: 1.8677959442138672. Trajectories: 22. Mean Length: 186.1818181818182.
205 completed
206 completed
207 completed
208 completed
209 completed
210 completed
211 completed
212 completed
213 completed
214 Epoch: 17. UP      Mean Return: 2.9449005126953125. Trajectories: 17. Mean Length: 240.94117647058823.
215 completed
216 completed
217 completed
218 completed
219 completed
220 completed
221 completed
222 completed
223 Epoch: 18. DOWN      Mean Return: 2.4899797439575195. Trajectories: 19. Mean Length: 215.57894736842104.
224 completed
225 completed
226 completed
227 completed
228 completed
229 completed
230 completed
231 completed
232 completed
233 Epoch: 19. UP      Mean Return: 3.483168363571167. Trajectories: 16. Mean Length: 256.0.
234 completed
235 completed
236 completed
237 completed
238 completed
239 completed
240 completed
241 completed
242 saving models
243 Epoch: 20. DOWN      Mean Return: 2.0142853260040283. Trajectories: 21. Mean Length: 195.04761904761904.
244 completed
245 completed
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247 completed  
248 completed  
249 completed  
250 completed  
251 completed  
252 Epoch: 21. UP Mean Return: 2.3073244094848633. Trajectories: 18. Mean Length: 227.55555555555554.  
253 completed  
254 completed  
255 completed  
256 completed  
257 completed  
258 completed  
259 completed  
260 completed  
261 Epoch: 22. UP Mean Return: 2.7537527084350586. Trajectories: 17. Mean Length: 240.94117647058823.  
262 completed  
263 completed  
264 completed  
265 completed  
266 completed  
267 completed  
268 completed  
269 Epoch: 23. DOWN Mean Return: 2.7223410606384277. Trajectories: 16. Mean Length: 256.0.  
270 completed  
271 completed  
272 completed  
273 completed  
274 completed  
275 completed  
276 completed  
277 Epoch: 24. DOWN Mean Return: 2.5869171619415283. Trajectories: 17. Mean Length: 240.94117647058823.  
278 completed  
279 completed  
280 completed  
281 completed  
282 completed  
283 completed  
284 completed  
285 completed  
286 completed  
287 Epoch: 25. UP Mean Return: 2.627176523208618. Trajectories: 18. Mean Length: 227.55555555555554.  
288 completed  
289 completed  
290 completed  
291 completed  
292 completed  
293 completed  
294 completed  
295 completed  
296 completed  
297 Epoch: 26. UP Mean Return: 4.001572132110596. Trajectories: 15. Mean Length: 273.0666666666666.  
298 completed  
299 completed  
300 completed  
301 completed  
302 completed  
303 completed  
304 completed  
305 completed  
306 Epoch: 27. DOWN Mean Return: 2.1378748416900635. Trajectories: 21. Mean Length: 195.04761904761904.  
307 completed  
308 completed  
309 completed  
310 completed  
311 completed  
312 completed  
313 completed  
314 completed  
315 Epoch: 28. DOWN Mean Return: 1.7852208614349365. Trajectories: 21. Mean Length: 195.04761904761904.  
316 completed  
317 completed  
318 completed  
319 completed  
320 completed  
321 completed  
322 completed  
323 completed  
324 completed  
325 Epoch: 29. UP Mean Return: 1.9257855415344238. Trajectories: 24. Mean Length: 170.6666666666666.  
326 completed  
327 completed  
328 completed  
329 completed  
330 completed  
331 completed  
332 completed  
333 saving models  
334 Epoch: 30. DOWN Mean Return: 1.221350073814392. Trajectories: 25. Mean Length: 163.84.  
335 completed

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336 completed
337 completed
338 completed
339 completed
340 completed
341 Epoch: 31. UP      Mean Return: 1.399156093597412. Trajectories: 22. Mean Length: 186.1818181818182.
342 completed
343 completed
344 completed
345 completed
346 completed
347 completed
348 completed
349 completed
350 Epoch: 32. UP      Mean Return: 1.8195061683654785. Trajectories: 22. Mean Length: 186.1818181818182.
351 completed
352 completed
353 completed
354 completed
355 completed
356 completed
357 completed
358 completed
359 Epoch: 33. UP      Mean Return: 3.9960367679595947. Trajectories: 14. Mean Length: 292.57142857142856.
360 completed
361 completed
362 completed
363 completed
364 completed
365 completed
366 completed
367 completed
368 Epoch: 34. DOWN    Mean Return: 2.9125497341156006. Trajectories: 17. Mean Length: 240.94117647058823.
369 completed
370 completed
371 completed
372 completed
373 completed
374 completed
375 completed
376 Epoch: 35. DOWN    Mean Return: 2.000152111053467. Trajectories: 20. Mean Length: 204.8.
377 completed
378 completed
379 completed
380 completed
381 completed
382 completed
383 completed
384 completed
385 Epoch: 36. DOWN    Mean Return: 1.2507219314575195. Trajectories: 25. Mean Length: 163.84.
386 completed
387 completed
388 completed
389 completed
390 completed
391 completed
392 completed
393 Epoch: 37. DOWN    Mean Return: 0.8379811644554138. Trajectories: 27. Mean Length: 151.7037037037037.
394 completed
395 completed
396 completed
397 completed
398 completed
399 completed
400 completed
401 Epoch: 38. UP      Mean Return: 1.6813328266143799. Trajectories: 23. Mean Length: 178.08695652173913.
402 completed
403 completed
404 completed
405 completed
406 completed
407 completed
408 completed
409 completed
410 Epoch: 39. UP  Best ! Mean Return: 4.62540340423584. Trajectories: 13. Mean Length: 315.0769230769231.
411 completed
412 completed
413 completed
414 completed
415 completed
416 completed
417 completed
418 completed
419 completed
420 saving models
421 Epoch: 40. DOWN    Mean Return: 3.0552926063537598. Trajectories: 17. Mean Length: 240.94117647058823.
422 completed
423 completed
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425 completed  
426 completed  
427 completed  
428 completed  
429 completed  
430 Epoch: 41. DOWN Mean Return: 1.4478530883789062. Trajectories: 24. Mean Length: 170.6666666666666.  
431 completed  
432 completed  
433 completed  
434 completed  
435 completed  
436 Epoch: 42. DOWN Mean Return: 1.4398268461227417. Trajectories: 22. Mean Length: 186.18181818182.  
437 completed  
438 completed  
439 completed  
440 completed  
441 completed  
442 completed  
443 completed  
444 completed  
445 completed  
446 Epoch: 43. UP Mean Return: 2.202134609222412. Trajectories: 21. Mean Length: 195.04761904761904.  
447 completed  
448 completed  
449 completed  
450 completed  
451 completed  
452 completed  
453 completed  
454 completed  
455 completed  
456 Epoch: 44. DOWN Mean Return: 1.9268505573272705. Trajectories: 23. Mean Length: 178.08695652173913.  
457 completed  
458 completed  
459 completed  
460 completed  
461 completed  
462 completed  
463 completed  
464 completed  
465 completed  
466 Epoch: 45. UP Mean Return: 2.1274492740631104. Trajectories: 20. Mean Length: 204.8.  
467 completed  
468 completed  
469 completed  
470 completed  
471 completed  
472 completed  
473 Epoch: 46. UP Mean Return: 2.844996213912964. Trajectories: 16. Mean Length: 256.0.  
474 completed  
475 completed  
476 completed  
477 completed  
478 completed  
479 completed  
480 completed  
481 completed  
482 Epoch: 47. DOWN Mean Return: 1.9755383729934692. Trajectories: 21. Mean Length: 195.04761904761904.  
483 completed  
484 completed  
485 completed  
486 completed  
487 completed  
488 completed  
489 completed  
490 completed  
491 completed  
492 Epoch: 48. UP Mean Return: 2.174607992172241. Trajectories: 22. Mean Length: 186.18181818182.  
493 completed  
494 completed  
495 completed  
496 completed  
497 completed  
498 completed  
499 completed  
500 completed  
501 Epoch: 49. DOWN Mean Return: 1.607025146484375. Trajectories: 23. Mean Length: 178.08695652173913.  
502 completed  
503 completed  
504 completed  
505 completed  
506 completed  
507 completed  
508 completed  
509 completed  
510 completed  
511 saving models  
512 Epoch: 50. UP Mean Return: 2.7340447902679443. Trajectories: 19. Mean Length: 215.57894736842104.  
513 completed

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514 completed
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520 completed
521 Epoch: 51. DOWN      Mean Return: 0.4018601179122925. Trajectories: 34.  Mean Length: 120.47058823529412.
522 completed
523 completed
524 completed
525 completed
526 completed
527 completed
528 completed
529 completed
530 completed
531 Epoch: 52. UP        Mean Return: 3.653759241104126.  Trajectories: 15.  Mean Length: 273.06666666666666.
532 completed
533 completed
534 completed
535 completed
536 completed
537 completed
538 completed
539 completed
540 completed
541 Epoch: 53. DOWN      Mean Return: 2.7755563259124756. Trajectories: 18.  Mean Length: 227.5555555555554.
542 completed
543 completed
544 completed
545 completed
546 completed
547 completed
548 completed
549 completed
550 completed
551 Epoch: 54. DOWN      Mean Return: 2.250396966934204.  Trajectories: 20.  Mean Length: 204.8.
552 completed
553 completed
554 completed
555 completed
556 completed
557 completed
558 completed
559 completed
560 Epoch: 55. DOWN      Mean Return: 2.0377888679504395. Trajectories: 20.  Mean Length: 204.8.
561 completed
562 completed
563 completed
564 completed
565 completed
566 completed
567 completed
568 completed
569 completed
570 Epoch: 56. UP        Mean Return: 3.684593915939331.  Trajectories: 15.  Mean Length: 273.06666666666666.
571 completed
572 completed
573 completed
574 completed
575 completed
576 completed
577 completed
578 completed
579 completed
580 Epoch: 57. DOWN      Mean Return: 2.861860990524292.  Trajectories: 18.  Mean Length: 227.5555555555554.
581 completed
582 completed
583 completed
584 completed
585 completed
586 completed
587 completed
588 Epoch: 58. DOWN      Mean Return: 1.0101884603500366. Trajectories: 24.  Mean Length: 170.66666666666666.
589 completed
590 completed
591 completed
592 completed
593 completed
594 completed
595 completed
596 Epoch: 59. DOWN      Mean Return: 0.5998069047927856. Trajectories: 32.  Mean Length: 128.0.
597 completed
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603 completed  
604 completed  
605 completed  
606 completed  
607 saving models  
608 Epoch: 60. UP Mean Return: 2.1504385471343994. Trajectories: 22. Mean Length: 186.1818181818182.  
609 completed  
610 completed  
611 completed  
612 completed  
613 completed  
614 completed  
615 completed  
616 completed  
617 completed  
618 Epoch: 61. UP Best ! Mean Return: 4.799727439880371. Trajectories: 13. Mean Length: 315.0769230769231.  
619 completed  
620 completed  
621 completed  
622 completed  
623 completed  
624 completed  
625 completed  
626 completed  
627 completed  
628 completed  
629 completed  
630 Epoch: 62. DOWN Mean Return: 4.346445560455322. Trajectories: 16. Mean Length: 256.0.  
631 completed  
632 completed  
633 completed  
634 completed  
635 completed  
636 completed  
637 completed  
638 completed  
639 completed  
640 Epoch: 63. DOWN Mean Return: 1.6758414506912231. Trajectories: 26. Mean Length: 157.53846153846155.  
641 completed  
642 completed  
643 completed  
644 completed  
645 completed  
646 completed  
647 completed  
648 completed  
649 Epoch: 64. UP Mean Return: 3.295091152191162. Trajectories: 17. Mean Length: 240.94117647058823.  
650 completed  
651 completed  
652 completed  
653 completed  
654 completed  
655 completed  
656 completed  
657 completed  
658 Epoch: 65. DOWN Mean Return: 2.285060167312622. Trajectories: 19. Mean Length: 215.57894736842104.  
659 completed  
660 completed  
661 completed  
662 completed  
663 completed  
664 completed  
665 completed  
666 completed  
667 completed  
668 Epoch: 66. DOWN Mean Return: 1.747040033340454. Trajectories: 21. Mean Length: 195.04761904761904.  
669 completed  
670 completed  
671 completed  
672 completed  
673 completed  
674 completed  
675 completed  
676 Epoch: 67. DOWN Mean Return: 1.6817721128463745. Trajectories: 22. Mean Length: 186.18181818182.  
677 completed  
678 completed  
679 completed  
680 completed  
681 completed  
682 completed  
683 completed  
684 completed  
685 completed  
686 Epoch: 68. UP Mean Return: 1.7776679992675781. Trajectories: 24. Mean Length: 170.66666666666666.  
687 completed  
688 completed  
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692 completed  
693 completed  
694 completed  
695 completed  
696 completed  
697 Epoch: 69. UP Mean Return: 4.0311737060546875. Trajectories: 16. Mean Length: 256.0.  
698 completed  
699 completed  
700 completed  
701 completed  
702 completed  
703 completed  
704 completed  
705 completed  
706 completed  
707 completed  
708 saving models  
709 Epoch: 70. DOWN Mean Return: 2.573749542236328. Trajectories: 22. Mean Length: 186.1818181818182.  
710 completed  
711 completed  
712 completed  
713 completed  
714 completed  
715 completed  
716 completed  
717 completed  
718 completed  
719 Epoch: 71. UP Mean Return: 2.6746151447296143. Trajectories: 20. Mean Length: 204.8.  
720 completed  
721 completed  
722 completed  
723 completed  
724 completed  
725 completed  
726 completed  
727 completed  
728 completed  
729 Epoch: 72. UP Mean Return: 2.9001481533050537. Trajectories: 18. Mean Length: 227.5555555555554.  
730 completed  
731 completed  
732 completed  
733 completed  
734 completed  
735 completed  
736 completed  
737 completed  
738 completed  
739 completed  
740 Epoch: 73. UP Mean Return: 4.110274314880371. Trajectories: 16. Mean Length: 256.0.  
741 completed  
742 completed  
743 completed  
744 completed  
745 completed  
746 completed  
747 completed  
748 completed  
749 Epoch: 74. DOWN Mean Return: 0.8623862862586975. Trajectories: 29. Mean Length: 141.24137931034483.  
750 completed  
751 completed  
752 completed  
753 completed  
754 completed  
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756 completed  
757 completed  
758 completed  
759 Epoch: 75. UP Mean Return: 2.088047742843628. Trajectories: 23. Mean Length: 178.08695652173913.  
760 completed  
761 completed  
762 completed  
763 completed  
764 completed  
765 completed  
766 Epoch: 76. DOWN Mean Return: 1.244639277458191. Trajectories: 23. Mean Length: 178.08695652173913.  
767 completed  
768 completed  
769 completed  
770 completed  
771 completed  
772 completed  
773 Epoch: 77. UP Mean Return: 2.193739175796509. Trajectories: 20. Mean Length: 204.8.  
774 completed  
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781 completed  
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783 completed  
784 completed  
785 Epoch: 78. UP Mean Return: 4.580307960510254. Trajectories: 16. Mean Length: 256.0.  
786 completed  
787 completed  
788 completed  
789 completed  
790 completed  
791 completed  
792 completed  
793 completed  
794 completed  
795 completed  
796 Epoch: 79. DOWN Mean Return: 3.2021853923797607. Trajectories: 19. Mean Length: 215.57894736842104.  
797 completed  
798 completed  
799 completed  
800 completed  
801 completed  
802 completed  
803 completed  
804 saving models  
805 Epoch: 80. DOWN Mean Return: 1.3090596199035645. Trajectories: 26. Mean Length: 157.53846153846155.  
806 completed  
807 completed  
808 completed  
809 completed  
810 completed  
811 completed  
812 completed  
813 completed  
814 completed  
815 Epoch: 81. UP Mean Return: 3.3447535037994385. Trajectories: 18. Mean Length: 227.55555555555554.  
816 completed  
817 completed  
818 completed  
819 completed  
820 completed  
821 completed  
822 completed  
823 completed  
824 completed  
825 completed  
826 completed  
827 Epoch: 82. UP Mean Return: 3.5866007804870605. Trajectories: 17. Mean Length: 240.94117647058823.  
828 completed  
829 completed  
830 completed  
831 completed  
832 completed  
833 completed  
834 completed  
835 completed  
836 completed  
837 completed  
838 Epoch: 83. DOWN Mean Return: 2.630319118499756. Trajectories: 20. Mean Length: 204.8.  
839 completed  
840 completed  
841 completed  
842 completed  
843 completed  
844 completed  
845 completed  
846 completed  
847 Epoch: 84. DOWN Mean Return: 2.1028051376342773. Trajectories: 21. Mean Length: 195.04761904761904.  
848 completed  
849 completed  
850 completed  
851 completed  
852 completed  
853 completed  
854 completed  
855 completed  
856 completed  
857 completed  
858 completed  
859 Epoch: 85. UP Mean Return: 3.890486478805542. Trajectories: 19. Mean Length: 215.57894736842104.  
860 completed  
861 completed  
862 completed  
863 completed  
864 completed  
865 completed  
866 completed  
867 completed  
868 completed  
869 completed

File - main

870 completed  
871 Epoch: 86. DOWN Mean Return: 3.799940347671509. Trajectories: 18. Mean Length: 227.55555555555554.  
872 completed  
873 completed  
874 completed  
875 completed  
876 completed  
877 completed  
878 completed  
879 completed  
880 completed  
881 completed  
882 Epoch: 87. UP Mean Return: 3.902463912963867. Trajectories: 17. Mean Length: 240.94117647058823.  
883 completed  
884 completed  
885 completed  
886 completed  
887 completed  
888 completed  
889 completed  
890 completed  
891 Epoch: 88. DOWN Mean Return: 2.1679136753082275. Trajectories: 22. Mean Length: 186.1818181818182.  
892 completed  
893 completed  
894 completed  
895 completed  
896 completed  
897 completed  
898 completed  
899 completed  
900 completed  
901 Epoch: 89. UP Mean Return: 2.7883188724517822. Trajectories: 19. Mean Length: 215.57894736842104.  
902 completed  
903 completed  
904 completed  
905 completed  
906 completed  
907 completed  
908 completed  
909 completed  
910 completed  
911 saving models  
912 Epoch: 90. DOWN Mean Return: 2.0743820667266846. Trajectories: 24. Mean Length: 170.6666666666666.  
913 completed  
914 completed  
915 completed  
916 completed  
917 completed  
918 completed  
919 completed  
920 completed  
921 Epoch: 91. DOWN Mean Return: 0.7991982698440552. Trajectories: 32. Mean Length: 128.0.  
922 completed  
923 completed  
924 completed  
925 completed  
926 completed  
927 completed  
928 completed  
929 completed  
930 completed  
931 completed  
932 Epoch: 92. UP Mean Return: 2.9633028507232666. Trajectories: 18. Mean Length: 227.55555555555554.  
933 completed  
934 completed  
935 completed  
936 completed  
937 completed  
938 completed  
939 completed  
940 completed  
941 completed  
942 Epoch: 93. DOWN Mean Return: 2.3328042030334473. Trajectories: 23. Mean Length: 178.08695652173913.  
943 completed  
944 completed  
945 completed  
946 completed  
947 completed  
948 completed  
949 completed  
950 completed  
951 Epoch: 94. DOWN Mean Return: 1.4681098461151123. Trajectories: 25. Mean Length: 163.84.  
952 completed  
953 completed  
954 completed  
955 completed  
956 completed  
957 completed  
958 completed

File - main

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959 completed
960 completed
961 Epoch: 95. UP      Mean Return: 3.0957977771759033. Trajectories: 19.  Mean Length: 215.57894736842104.
962 completed
963 completed
964 completed
965 completed
966 completed
967 completed
968 completed
969 completed
970 completed
971 completed
972 Epoch: 96. DOWN    Mean Return: 2.3470685482025146. Trajectories: 22.  Mean Length: 186.1818181818182.
973 completed
974 completed
975 completed
976 completed
977 completed
978 completed
979 completed
980 Epoch: 97. DOWN    Mean Return: 1.741477131843567. Trajectories: 23.  Mean Length: 178.08695652173913.
981 completed
982 completed
983 completed
984 completed
985 completed
986 completed
987 completed
988 completed
989 completed
990 completed
991 completed
992 Epoch: 98. UP      Mean Return: 3.020726203918457. Trajectories: 20.  Mean Length: 204.8.
993 completed
994 completed
995 completed
996 completed
997 completed
998 completed
999 completed
1000 completed
1001 completed
1002 Epoch: 99. DOWN    Mean Return: 2.65266489982605. Trajectories: 20.  Mean Length: 204.8.
1003 completed
1004 completed
1005 completed
1006 completed
1007 completed
1008 completed
1009 completed
1010 completed
1011 completed
1012 completed
1013 saving models
1014 Epoch: 100. UP     Mean Return: 3.122976541519165. Trajectories: 19.  Mean Length: 215.57894736842104.
1015 Training completed_
1016 Mean Reward [<tf.Tensor: shape=(), dtype=float32, numpy=0.5826151>, <tf.Tensor: shape=(), dtype=float32, numpy=0.56940496>, <tf.Tensor: shape=(), dtype=float32, numpy=0.92802125>, <tf.Tensor: shape=(), dtype=float32, numpy=0.60793704>, <tf.Tensor: shape=(), dtype=float32, numpy=1.771366>, <tf.Tensor: shape=(), dtype=float32, numpy=2.0320208>, <tf.Tensor: shape=(), dtype=float32, numpy=0.84957063>, <tf.Tensor: shape=(), dtype=float32, numpy=1.9727752>, <tf.Tensor: shape=(), dtype=float32, numpy=1.2153019>, <tf.Tensor: shape=(), dtype=float32, numpy=2.4933143>, <tf.Tensor: shape=(), dtype=float32, numpy=3.5266004>, <tf.Tensor: shape=(), dtype=float32, numpy=2.2190075>, <tf.Tensor: shape=(), dtype=float32, numpy=1.8659688>, <tf.Tensor: shape=(), dtype=float32, numpy=4.171798>, <tf.Tensor: shape=(), dtype=float32, numpy=2.5869172>, <tf.Tensor: shape=(), dtype=float32, numpy=2.0400505>, <tf.Tensor: shape=(), dtype=float32, numpy=2.4899797>, <tf.Tensor: shape=(), dtype=float32, numpy=3.4831684>, <tf.Tensor: shape=(), dtype=float32, numpy=2.0142853>, <tf.Tensor: shape=(), dtype=float32, numpy=2.3073244>, <tf.Tensor: shape=(), dtype=float32, numpy=2.7537527>, <tf.Tensor: shape=(), dtype=float32, numpy=2.722341>, <tf.Tensor: shape=(), dtype=float32, numpy=2.5869172>, <tf.Tensor: shape=(), dtype=float32, numpy=2.6271765>, <tf.Tensor: shape=(), dtype=float32, numpy=4.001572>, <tf.Tensor: shape=(), dtype=float32, numpy=2.1378748>, <tf.Tensor: shape=(), dtype=float32, numpy=1.7852209>, <tf.Tensor: shape=(), dtype=float32, numpy=1.9257855>, <tf.Tensor: shape=(), dtype=float32, numpy=1.2213501>, <tf.Tensor: shape=(), dtype=float32, numpy=1.3991561>, <tf.Tensor: shape=(), dtype=float32, numpy=2.9125497>, <tf.Tensor: shape=(), dtype=float32, numpy=2.000152>, <tf.Tensor: shape=(), dtype=float32, numpy=1.25607219>, <tf.Tensor: shape=(), dtype=float32, numpy=0.83798116>, <tf.Tensor: shape=(), dtype=float32, numpy=1.6813328>, <tf.Tensor: shape=(), dtype=float32, numpy=4.6254034>, <tf.Tensor: shape=(), dtype=float32, numpy=3.0552926>, <tf.Tensor: shape=(), dtype=float32, numpy=1.4478531>, <tf.Tensor: shape=(), dtype=float32, numpy=1.4398268>, <tf.Tensor: shape=(), dtype=float32, numpy=2.2021346>, <tf.Tensor: shape=(), dtype=float32, numpy=1.9268506>, <tf.Tensor: shape=(), dtype=float32, numpy=2.1274493>, <tf.Tensor: shape=(), dtype=float32, numpy=2.8449962>, <tf.Tensor: shape=(), dtype=float32, numpy=1.9755384>, <tf.Tensor: shape=(), dtype=float32, numpy=2.174608>, <tf.Tensor: shape=(), dtype=float32, numpy=1.6070251>, <tf.Tensor: shape=(), dtype=float32, numpy=2.7340448>, <tf.Tensor: shape=(), dtype=float32, numpy=0.40186012>, <tf.Tensor: shape=(), dtype=float32, numpy=3.6537592>, <tf.Tensor: shape=(), dtype=float32, numpy=2.7755563>, <tf.Tensor: shape=(), dtype=float32, numpy=2.250397>, <tf.Tensor: shape=(), dtype=float32, numpy=2.0377889>, <tf.Tensor: shape=(), dtype=float32, numpy=3.684594>, <tf.Tensor: shape=(), dtype=float32, numpy=2.861861>, <tf.Tensor: shape=(), dtype=float32, numpy=1.0101885>, <tf.Tensor: shape=(), dtype=float32, numpy=0.5998069>, <tf.Tensor: shape=(), dtype=float32, numpy=2.1504385>, <tf.Tensor: shape=(), dtype=float32, numpy=4.7997274>, <tf.Tensor: shape=(), dtype=float32, numpy=4.3464456>, <tf.Tensor: shape=(), dtype=float32, numpy=1.6758415>, <tf.Tensor: shape=(), dtype=float32, numpy=3.2950912>, <tf.Tensor: shape=(), dtype=float32, numpy=2.2850602>, <tf.Tensor: shape=(), dtype=float32, numpy=1.74704>, <tf.Tensor: shape=(), dtype=float32, numpy=1.6817721>, <tf.Tensor: shape=(), dtype=
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1017 Mean Length [146.28571428571428, 146.28571428571428, 163.84, 141.24137931034483, 186.1818181818182, 195.04761904761904
, 163.84, 204.8, 163.84, 227.55555555555554, 256.0, 195.04761904761904, 215.57894736842104, 292.57142857142856, 186.
18181818182, 186.18181818182, 240.94117647058823, 215.57894736842104, 256.0, 195.04761904761904, 227.
55555555555554, 240.94117647058823, 256.0, 240.94117647058823, 227.55555555555554, 273.0666666666666666, 195.
04761904761904, 195.04761904761904, 170.6666666666666666, 163.84, 186.18181818182, 186.18181818182, 292.
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18181818182, 170.6666666666666666, 256.0, 186.18181818182, 204.8, 227.55555555555554, 256.0, 141.24137931034483, 178
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94117647058823, 204.8, 195.04761904761904, 215.57894736842104, 227.55555555555554, 240.94117647058823, 186.
18181818182, 215.57894736842104, 170.6666666666666666, 128.0, 227.55555555555554, 178.08695652173913, 163.84, 215.
57894736842104, 186.18181818182, 178.08695652173913, 204.8, 204.8, 215.57894736842104]
1018 loading NN from: saved_model
1019 CURRENT ACTOR-CRITIC NETWORK IN USE
1020 Model: "ActorNet"
1021 -----
1022 Layer (type)          Output Shape         Param #  Connected to
1023 =====
1024 input_1 (InputLayer)  [(None, 5)]        0
1025 -----
1026 acc_1 (Dense)         (None, 128)       768      input_1[0][0]
1027 -----
1028 dir_1 (Dense)         (None, 128)       768      input_1[0][0]
1029 -----
1030 acc_2 (Dense)         (None, 128)       16512    acc_1[0][0]
1031 -----
1032 dir_2 (Dense)         (None, 128)       16512    dir_1[0][0]
1033 -----
1034 acc_3 (Dense)         (None, 128)       16512    acc_2[0][0]
1035 -----
1036 dir_3 (Dense)         (None, 128)       16512    dir_2[0][0]
1037 -----
1038 acc_out_mu (Dense)   (None, 1)          129      acc_3[0][0]
1039 -----
1040 dir_out_mu (Dense)   (None, 1)          129      dir_3[0][0]
1041 -----
1042 concatenate (Concatenate) (None, 2)        0      acc_out_mu[0][0]
1043                               dir_out_mu[0][0]
1044 -----
1045 Total params: 67,842
1046 Trainable params: 67,842
1047 Non-trainable params: 0
1048 -----
1049 Model: "CriticNet"
1050 -----
1051 Layer (type)          Output Shape         Param #
1052 =====
1053 input_2 (InputLayer)  [(None, 5)]        0
1054 -----
1055 layer_1 (Dense)       (None, 128)       768
1056 -----
1057 layer_2 (Dense)       (None, 128)       16512
1058 -----
1059 layer_3 (Dense)       (None, 128)       16512
1060 -----
1061 dense (Dense)        (None, 1)          129
1062 -----
1063 Total params: 33,921
1064 Trainable params: 33,921
1065 Non-trainable params: 0
1066 -----
1067 2022-01-31 15:18:25.939457: W tensorflow/core/grappler/optimizers/loop_optimizer.cc:907] Skipping loop optimization
for Merge node with control input: direction_norm/assert_greater/Assert/AssertGuard/branch_executed/_57
1068 completed
1069 completed
1070 completed
1071 completed
1072 completed
1073 completed
1074 completed

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File - main

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1075 completed
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1098 completed
1099 completed
1100 completed
1101 completed
1102 completed
1103 completed
1104 completed
1105 completed
1106 completed
1107 completed
1108 completed
1109 completed
1110 completed
1111 completed
1112 completed
1113 completed
1114 completed
1115 completed
1116 completed
1117 test saved_model : mean steps : 228. mean rewards : 3.0054101943969727
1118 loading NN from: saved_best_model
1119 CURRENT ACTOR-CRITIC NETWORK IN USE
1120 Model: "ActorNet"
1121 -----
1122 Layer (type)          Output Shape         Param #  Connected to
1123 =====
1124 input_1 (InputLayer) [(None, 5)]        0
1125 -----
1126 acc_1 (Dense)        (None, 128)         768      input_1[0][0]
1127 -----
1128 dir_1 (Dense)        (None, 128)         768      input_1[0][0]
1129 -----
1130 acc_2 (Dense)        (None, 128)         16512    acc_1[0][0]
1131 -----
1132 dir_2 (Dense)        (None, 128)         16512    dir_1[0][0]
1133 -----
1134 acc_3 (Dense)        (None, 128)         16512    acc_2[0][0]
1135 -----
1136 dir_3 (Dense)        (None, 128)         16512    dir_2[0][0]
1137 -----
1138 acc_out_mu (Dense)   (None, 1)           129      acc_3[0][0]
1139 -----
1140 dir_out_mu (Dense)   (None, 1)           129      dir_3[0][0]
1141 -----
1142 concatenate (Concatenate) (None, 2)        0       acc_out_mu[0][0]
1143                               dir_out_mu[0][0]
1144 -----
1145 Total params: 67,842
1146 Trainable params: 67,842
1147 Non-trainable params: 0
1148 -----
1149 Model: "CriticNet"
1150 -----
1151 Layer (type)          Output Shape         Param #
1152 =====
1153 input_2 (InputLayer) [(None, 5)]        0
1154 -----
1155 layer_1 (Dense)        (None, 128)         768
1156 -----
1157 layer_2 (Dense)        (None, 128)         16512
1158 -----
1159 layer_3 (Dense)        (None, 128)         16512
1160 -----
1161 dense (Dense)         (None, 1)           129
1162 -----
1163 Total params: 33,921
```

File - main

```
1164 Trainable params: 33,921
1165 Non-trainable params: 0
1166 -----
1167 2022-01-31 15:19:22.996239: W tensorflow/core/grappler/optimizers/loop_optimizer.cc:907] Skipping loop optimization
for Merge node with control input: accleration_norm/assert_greater/Assert/AssertGuard/branch_executed/_28
1168 completed
1169 completed
1170 completed
1171 completed
1172 completed
1173 completed
1174 completed
1175 completed
1176 completed
1177 completed
1178 completed
1179 completed
1180 completed
1181 completed
1182 completed
1183 completed
1184 completed
1185 completed
1186 completed
1187 completed
1188 completed
1189 completed
1190 completed
1191 completed
1192 completed
1193 completed
1194 completed
1195 completed
1196 completed
1197 completed
1198 completed
1199 completed
1200 completed
1201 completed
1202 completed
1203 completed
1204 completed
1205 completed
1206 completed
1207 completed
1208 completed
1209 completed
1210 completed
1211 test saved_best_model : mean steps : 197. mean rewards : 1.9908835887908936
1212
1213 Process finished with exit code 0
1214
```