

File - main

```
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 14:12:58.136299: 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 14:12:58.136485: 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 14:13:01.481442: 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 14:13:01.481715: 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 14:13:01.481973: 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 14:13:01.482233: 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 14:13:01.482484: 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 14:13:01.482736: 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 14:13:01.482992: 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 14:13:01.483242: 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 14:13:01.483376: 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 14:13:01.483839: 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 14:13:02.676033: I tensorflow/compiler/mlir/mlir_graph_optimization_pass.cc:185] None of the MLIR
Optimization Passes are enabled (registered 2)
69 2022-01-31 14:13:02.733509: W tensorflow/core/grappler/optimizers/loop_optimizer.cc:907] Skipping loop optimization for
Merge node with control input: direction_norm/assert_positive/assert_less/Assert/AssertGuard/branch_executed/_47
70 completed
71 completed
```

File - main

```
72 completed
73 completed
74 completed
75 completed
76 completed
77 2022-01-31 14:13:20.020059: 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
78 2022-01-31 14:13:23.824574: 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.
79 Epoch: 1.    UP  Best ! Mean Return: 0.1959242820739746. Trajectories: 29.    Mean Length: 141.24137931034483.
80 completed
81 completed
82 completed
83 completed
84 completed
85 Epoch: 2.    UP  Best ! Mean Return: 0.2398672103881836. Trajectories: 29.    Mean Length: 141.24137931034483.
86 completed
87 completed
88 completed
89 Epoch: 3.    DOWN     Mean Return: -0.07599294930696487.    Trajectories: 25.    Mean Length: 163.84.
90 completed
91 completed
92 completed
93 completed
94 completed
95 completed
96 completed
97 Epoch: 4.    UP  Best ! Mean Return: 0.8513942956924438. Trajectories: 23.    Mean Length: 178.08695652173913.
98 completed
99 completed
100 completed
101 completed
102 completed
103 Epoch: 5.    UP  Best ! Mean Return: 1.4401813745498657. Trajectories: 19.    Mean Length: 215.57894736842104.
104 completed
105 completed
106 completed
107 completed
108 completed
109 Epoch: 6.    DOWN     Mean Return: -0.3147730827331543.    Trajectories: 36.    Mean Length: 113.77777777777777.
110 completed
111 completed
112 completed
113 completed
114 Epoch: 7.    UP      Mean Return: 0.11227130144834518.    Trajectories: 27.    Mean Length: 151.7037037037037.
115 completed
116 completed
117 completed
118 completed
119 Epoch: 8.    DOWN     Mean Return: -0.3767620325088501.    Trajectories: 35.    Mean Length: 117.02857142857142.
120 completed
121 completed
122 completed
123 completed
124 completed
125 completed
126 Epoch: 9.    UP      Mean Return: 0.7379395961761475. Trajectories: 22.    Mean Length: 186.1818181818182.
127 completed
128 completed
129 completed
130 completed
131 completed
132 completed
133 saving models
134 Epoch: 10.   DOWN     Mean Return: 0.01662524975836277.    Trajectories: 33.    Mean Length: 124.121212121212.
135 completed
136 completed
137 completed
138 completed
139 completed
140 Epoch: 11.   DOWN     Mean Return: -0.06825307011604309.    Trajectories: 29.    Mean Length: 141.24137931034483.
141 completed
142 completed
143 completed
144 completed
145 completed
146 Epoch: 12.   UP  Best ! Mean Return: 1.4816033840179443. Trajectories: 20.    Mean Length: 204.8.
147 completed
148 completed
149 completed
150 completed
151 completed
152 completed
153 Epoch: 13.   DOWN     Mean Return: -0.06723286956548691.    Trajectories: 32.    Mean Length: 128.0.
154 completed
155 completed
156 completed
157 completed
```

File - main

```
158 Epoch: 14. UP      Mean Return: 0.03376626968383789.    Trajectories: 29.    Mean Length: 141.24137931034483.  
159 completed  
160 completed  
161 completed  
162 completed  
163 completed  
164 Epoch: 15. DOWN    Mean Return: -0.6954204440116882.    Trajectories: 39.    Mean Length: 105.02564102564102.  
165 completed  
166 completed  
167 completed  
168 completed  
169 completed  
170 completed  
171 Epoch: 16. UP      Mean Return: -0.39313870668411255.    Trajectories: 38.    Mean Length: 107.78947368421052.  
172 completed  
173 completed  
174 completed  
175 completed  
176 completed  
177 completed  
178 completed  
179 completed  
180 Epoch: 17. UP      Mean Return: 1.4735138416290283.    Trajectories: 22.    Mean Length: 186.1818181818182.  
181 completed  
182 completed  
183 completed  
184 completed  
185 completed  
186 completed  
187 Epoch: 18. DOWN    Mean Return: 0.8431937098503113.    Trajectories: 26.    Mean Length: 157.53846153846155.  
188 completed  
189 completed  
190 completed  
191 completed  
192 completed  
193 Epoch: 19. DOWN    Mean Return: 0.3384992480278015.    Trajectories: 25.    Mean Length: 163.84.  
194 completed  
195 completed  
196 completed  
197 completed  
198 completed  
199 saving models  
200 Epoch: 20. UP      Mean Return: 0.7977855205535889.    Trajectories: 24.    Mean Length: 170.6666666666666.  
201 completed  
202 completed  
203 completed  
204 completed  
205 completed  
206 completed  
207 completed  
208 Epoch: 21. DOWN    Mean Return: 0.36429956555366516.    Trajectories: 28.    Mean Length: 146.28571428571428.  
209 completed  
210 completed  
211 completed  
212 completed  
213 completed  
214 Epoch: 22. UP  Best ! Mean Return: 2.1591482162475586.    Trajectories: 17.    Mean Length: 240.94117647058823.  
215 completed  
216 completed  
217 completed  
218 completed  
219 completed  
220 Epoch: 23. DOWN    Mean Return: 0.7049336433410645.    Trajectories: 24.    Mean Length: 170.6666666666666.  
221 completed  
222 completed  
223 completed  
224 completed  
225 completed  
226 completed  
227 Epoch: 24. UP  Best ! Mean Return: 2.728001356124878.    Trajectories: 15.    Mean Length: 273.0666666666666.  
228 completed  
229 completed  
230 completed  
231 completed  
232 completed  
233 completed  
234 Epoch: 25. DOWN    Mean Return: 1.2704039812088013.    Trajectories: 21.    Mean Length: 195.04761904761904.  
235 completed  
236 completed  
237 completed  
238 completed  
239 Epoch: 26. DOWN    Mean Return: -0.5865079760551453.    Trajectories: 36.    Mean Length: 113.77777777777777.  
240 completed  
241 completed  
242 completed  
243 completed  
244 completed  
245 completed  
246 Epoch: 27. UP      Mean Return: 0.7783679366111755.    Trajectories: 26.    Mean Length: 157.53846153846155.
```

File - main

247 completed
248 completed
249 completed
250 completed
251 completed
252 completed
253 completed
254 completed
255 Epoch: 28. UP Mean Return: 1.0692553520202637. Trajectories: 25. Mean Length: 163.84.
256 completed
257 completed
258 completed
259 completed
260 completed
261 completed
262 Epoch: 29. UP Mean Return: 2.269479274749756. Trajectories: 16. Mean Length: 256.0.
263 completed
264 completed
265 completed
266 completed
267 completed
268 saving models
269 Epoch: 30. DOWN Mean Return: 0.7730202078819275. Trajectories: 23. Mean Length: 178.08695652173913.
270 completed
271 completed
272 completed
273 completed
274 Epoch: 31. UP Mean Return: 0.7981104850769043. Trajectories: 23. Mean Length: 178.08695652173913.
275 completed
276 completed
277 completed
278 completed
279 completed
280 completed
281 completed
282 Epoch: 32. UP Mean Return: 1.0540432929992676. Trajectories: 23. Mean Length: 178.08695652173913.
283 completed
284 completed
285 completed
286 completed
287 completed
288 completed
289 Epoch: 33. UP Mean Return: 1.454127311706543. Trajectories: 21. Mean Length: 195.04761904761904.
290 completed
291 completed
292 completed
293 completed
294 completed
295 Epoch: 34. DOWN Mean Return: 1.0559617280960083. Trajectories: 20. Mean Length: 204.8.
296 completed
297 completed
298 completed
299 completed
300 completed
301 completed
302 completed
303 Epoch: 35. UP Mean Return: 1.194618821144104. Trajectories: 23. Mean Length: 178.08695652173913.
304 completed
305 completed
306 completed
307 completed
308 completed
309 completed
310 completed
311 completed
312 Epoch: 36. UP Mean Return: 1.3750964403152466. Trajectories: 22. Mean Length: 186.1818181818182.
313 completed
314 completed
315 completed
316 completed
317 completed
318 completed
319 completed
320 Epoch: 37. DOWN Mean Return: 1.1513184309005737. Trajectories: 22. Mean Length: 186.1818181818182.
321 completed
322 completed
323 completed
324 completed
325 completed
326 completed
327 Epoch: 38. DOWN Mean Return: 0.9513482451438904. Trajectories: 24. Mean Length: 170.66666666666666.
328 completed
329 completed
330 completed
331 completed
332 completed
333 completed
334 completed
335 completed

File - main

336 Epoch: 39. UP Mean Return: 1.0584477186203003. Trajectories: 24. Mean Length: 170.6666666666666.
337 completed
338 completed
339 completed
340 completed
341 completed
342 saving models
343 Epoch: 40. DOWN Mean Return: -0.06402108818292618. Trajectories: 32. Mean Length: 128.0.
344 completed
345 completed
346 completed
347 completed
348 completed
349 completed
350 completed
351 Epoch: 41. UP Mean Return: 1.4388823509216309. Trajectories: 21. Mean Length: 195.04761904761904.
352 completed
353 completed
354 completed
355 completed
356 completed
357 completed
358 completed
359 Epoch: 42. DOWN Mean Return: 1.2971762418746948. Trajectories: 22. Mean Length: 186.18181818182.
360 completed
361 completed
362 completed
363 completed
364 completed
365 completed
366 completed
367 Epoch: 43. UP Best ! Mean Return: 2.735050916671753. Trajectories: 15. Mean Length: 273.0666666666666.
368 completed
369 completed
370 completed
371 completed
372 completed
373 completed
374 Epoch: 44. DOWN Mean Return: 0.08681792765855789. Trajectories: 28. Mean Length: 146.28571428571428.
375 completed
376 completed
377 completed
378 completed
379 completed
380 completed
381 completed
382 completed
383 Epoch: 45. UP Mean Return: 1.5439479351043701. Trajectories: 20. Mean Length: 204.8.
384 completed
385 completed
386 completed
387 completed
388 completed
389 completed
390 Epoch: 46. DOWN Mean Return: -0.05906997621059418. Trajectories: 36. Mean Length: 113.77777777777777.
391 completed
392 completed
393 completed
394 completed
395 completed
396 completed
397 completed
398 Epoch: 47. UP Mean Return: 0.9391363263130188. Trajectories: 23. Mean Length: 178.08695652173913.
399 completed
400 completed
401 completed
402 completed
403 completed
404 completed
405 Epoch: 48. DOWN Mean Return: 0.7149060964584351. Trajectories: 25. Mean Length: 163.84.
406 completed
407 completed
408 completed
409 completed
410 completed
411 completed
412 completed
413 Epoch: 49. DOWN Mean Return: 0.4290804862976074. Trajectories: 28. Mean Length: 146.28571428571428.
414 completed
415 completed
416 completed
417 completed
418 completed
419 completed
420 saving models
421 Epoch: 50. UP Mean Return: 1.0341495275497437. Trajectories: 23. Mean Length: 178.08695652173913.
422 completed
423 completed
424 completed

File - main

425 completed
426 completed
427 Epoch: 51. DOWN Mean Return: 0.2344997376203537. Trajectories: 27. Mean Length: 151.7037037037037.
428 completed
429 completed
430 completed
431 completed
432 completed
433 completed
434 completed
435 Epoch: 52. UP Mean Return: 0.7151216864585876. Trajectories: 27. Mean Length: 151.7037037037037.
436 completed
437 completed
438 completed
439 completed
440 completed
441 completed
442 completed
443 completed
444 completed
445 Epoch: 53. UP Best ! Mean Return: 3.1764111518859863. Trajectories: 16. Mean Length: 256.0.
446 completed
447 completed
448 completed
449 completed
450 completed
451 completed
452 completed
453 Epoch: 54. DOWN Mean Return: 0.06020615994930267. Trajectories: 32. Mean Length: 128.0.
454 completed
455 completed
456 completed
457 completed
458 completed
459 completed
460 completed
461 completed
462 Epoch: 55. UP Mean Return: 1.8277294635772705. Trajectories: 20. Mean Length: 204.8.
463 completed
464 completed
465 completed
466 completed
467 completed
468 completed
469 Epoch: 56. DOWN Mean Return: 0.9827194809913635. Trajectories: 23. Mean Length: 178.08695652173913.
470 completed
471 completed
472 completed
473 completed
474 completed
475 completed
476 completed
477 completed
478 Epoch: 57. UP Mean Return: 1.4456723928451538. Trajectories: 24. Mean Length: 170.6666666666666.
479 completed
480 completed
481 completed
482 completed
483 completed
484 Epoch: 58. UP Mean Return: 1.60309898853302. Trajectories: 18. Mean Length: 227.5555555555554.
485 completed
486 completed
487 completed
488 completed
489 completed
490 completed
491 Epoch: 59. DOWN Mean Return: 0.8093404173851013. Trajectories: 25. Mean Length: 163.84.
492 completed
493 completed
494 completed
495 completed
496 completed
497 completed
498 completed
499 completed
500 saving models
501 Epoch: 60. UP Mean Return: 1.2946871519088745. Trajectories: 23. Mean Length: 178.08695652173913.
502 completed
503 completed
504 completed
505 completed
506 completed
507 completed
508 completed
509 completed
510 Epoch: 61. UP Mean Return: 1.8140714168548584. Trajectories: 19. Mean Length: 215.57894736842104.
511 completed
512 completed
513 completed

File - main

```
514 completed
515 completed
516 completed
517 completed
518 Epoch: 62. DOWN      Mean Return: 0.7030947208404541. Trajectories: 27. Mean Length: 151.7037037037037.
519 completed
520 completed
521 completed
522 completed
523 completed
524 completed
525 completed
526 Epoch: 63. UP        Mean Return: 2.0228283405303955. Trajectories: 19. Mean Length: 215.57894736842104.
527 completed
528 completed
529 completed
530 completed
531 completed
532 completed
533 completed
534 Epoch: 64. UP        Mean Return: 2.652186155319214. Trajectories: 17. Mean Length: 240.94117647058823.
535 completed
536 completed
537 completed
538 completed
539 completed
540 completed
541 Epoch: 65. DOWN      Mean Return: 0.998142659664154. Trajectories: 24. Mean Length: 170.6666666666666.
542 completed
543 completed
544 completed
545 completed
546 completed
547 completed
548 completed
549 completed
550 Epoch: 66. UP        Mean Return: 1.2702645063400269. Trajectories: 24. Mean Length: 170.6666666666666.
551 completed
552 completed
553 completed
554 completed
555 completed
556 completed
557 completed
558 Epoch: 67. UP        Mean Return: 2.6520941257476807. Trajectories: 17. Mean Length: 240.94117647058823.
559 completed
560 completed
561 completed
562 completed
563 completed
564 completed
565 completed
566 completed
567 completed
568 Epoch: 68. UP        Mean Return: 3.0340981483459473. Trajectories: 18. Mean Length: 227.5555555555555.
569 completed
570 completed
571 completed
572 completed
573 completed
574 completed
575 completed
576 completed
577 Epoch: 69. DOWN      Mean Return: 1.2802608013153076. Trajectories: 23. Mean Length: 178.08695652173913.
578 completed
579 completed
580 completed
581 completed
582 completed
583 completed
584 completed
585 saving models
586 Epoch: 70. UP        Mean Return: 1.7881425619125366. Trajectories: 20. Mean Length: 204.8.
587 completed
588 completed
589 completed
590 completed
591 completed
592 completed
593 completed
594 completed
595 Epoch: 71. UP        Mean Return: 2.2581069469451904. Trajectories: 20. Mean Length: 204.8.
596 completed
597 completed
598 completed
599 completed
600 completed
601 completed
602 completed
```

File - main

603 completed
604 completed
605 Epoch: 72. DOWN Mean Return: 1.581775188446045. Trajectories: 23. Mean Length: 178.08695652173913.
606 completed
607 completed
608 completed
609 completed
610 completed
611 completed
612 completed
613 Epoch: 73. UP Mean Return: 1.7551946640014648. Trajectories: 20. Mean Length: 204.8.
614 completed
615 completed
616 completed
617 completed
618 completed
619 completed
620 completed
621 completed
622 completed
623 Epoch: 74. DOWN Mean Return: 0.6303671002388. Trajectories: 32. Mean Length: 128.0.
624 completed
625 completed
626 completed
627 completed
628 completed
629 Epoch: 75. UP Mean Return: 0.9829899072647095. Trajectories: 22. Mean Length: 186.1818181818182.
630 completed
631 completed
632 completed
633 completed
634 completed
635 completed
636 completed
637 completed
638 Epoch: 76. UP Best ! Mean Return: 3.4891726970672607. Trajectories: 15. Mean Length: 273.0666666666666.
639 completed
640 completed
641 completed
642 completed
643 completed
644 completed
645 completed
646 Epoch: 77. DOWN Mean Return: 1.5459814071655273. Trajectories: 21. Mean Length: 195.04761904761904.
647 completed
648 completed
649 completed
650 completed
651 completed
652 completed
653 Epoch: 78. DOWN Mean Return: 1.3498923778533936. Trajectories: 21. Mean Length: 195.04761904761904.
654 completed
655 completed
656 completed
657 completed
658 completed
659 completed
660 completed
661 Epoch: 79. UP Mean Return: 2.055198907852173. Trajectories: 18. Mean Length: 227.5555555555554.
662 completed
663 completed
664 completed
665 completed
666 completed
667 completed
668 completed
669 completed
670 completed
671 saving models
672 Epoch: 80. DOWN Mean Return: 1.824988603591919. Trajectories: 22. Mean Length: 186.1818181818182.
673 completed
674 completed
675 completed
676 completed
677 completed
678 completed
679 completed
680 completed
681 Epoch: 81. UP Best ! Mean Return: 3.584082841873169. Trajectories: 15. Mean Length: 273.0666666666666.
682 completed
683 completed
684 completed
685 completed
686 completed
687 Epoch: 82. DOWN Mean Return: 0.4758310616016388. Trajectories: 27. Mean Length: 151.7037037037037.
688 completed
689 completed
690 completed
691 completed

File - main

692 completed
693 Epoch: 83. DOWN Mean Return: 0.2165294885635376. Trajectories: 31. Mean Length: 132.1290322580645.
694 completed
695 completed
696 completed
697 completed
698 completed
699 completed
700 Epoch: 84. UP Mean Return: 1.4399187564849854. Trajectories: 20. Mean Length: 204.8.
701 completed
702 completed
703 completed
704 completed
705 completed
706 completed
707 completed
708 Epoch: 85. DOWN Mean Return: 1.0731226205825806. Trajectories: 26. Mean Length: 157.53846153846155.
709 completed
710 completed
711 completed
712 completed
713 completed
714 Epoch: 86. DOWN Mean Return: 0.6422775387763977. Trajectories: 25. Mean Length: 163.84.
715 completed
716 completed
717 completed
718 completed
719 completed
720 completed
721 completed
722 completed
723 Epoch: 87. UP Mean Return: 2.593135356903076. Trajectories: 17. Mean Length: 240.94117647058823.
724 completed
725 completed
726 completed
727 completed
728 completed
729 completed
730 completed
731 Epoch: 88. UP Best ! Mean Return: 3.8660547733306885. Trajectories: 13. Mean Length: 315.0769230769231.
732 completed
733 completed
734 completed
735 completed
736 completed
737 completed
738 completed
739 completed
740 Epoch: 89. DOWN Mean Return: 1.6220942735671997. Trajectories: 22. Mean Length: 186.1818181818182.
741 completed
742 completed
743 completed
744 completed
745 completed
746 completed
747 completed
748 completed
749 completed
750 saving models
751 Epoch: 90. UP Mean Return: 2.1808276176452637. Trajectories: 20. Mean Length: 204.8.
752 completed
753 completed
754 completed
755 completed
756 completed
757 completed
758 completed
759 completed
760 Epoch: 91. UP Mean Return: 2.8795032501220703. Trajectories: 17. Mean Length: 240.94117647058823.
761 completed
762 completed
763 completed
764 completed
765 completed
766 completed
767 completed
768 completed
769 completed
770 Epoch: 92. DOWN Mean Return: 2.4274463653564453. Trajectories: 19. Mean Length: 215.57894736842104.
771 completed
772 completed
773 completed
774 completed
775 completed
776 Epoch: 93. DOWN Mean Return: 0.3377012610435486. Trajectories: 29. Mean Length: 141.24137931034483.
777 completed
778 completed
779 completed
780 completed

File - main

```

781 completed
782 completed
783 completed
784 completed
785 Epoch: 94. UP      Mean Return: 1.1629353761672974. Trajectories: 25. Mean Length: 163.84.
786 completed
787 completed
788 completed
789 completed
790 completed
791 completed
792 completed
793 Epoch: 95. UP      Mean Return: 1.2417696714401245. Trajectories: 22. Mean Length: 186.1818181818182.
794 completed
795 completed
796 completed
797 completed
798 completed
799 completed
800 completed
801 Epoch: 96. DOWN     Mean Return: 1.2273857593536377. Trajectories: 22. Mean Length: 186.1818181818182.
802 completed
803 completed
804 completed
805 completed
806 completed
807 completed
808 completed
809 completed
810 completed
811 Epoch: 97. UP      Mean Return: 1.943905234336853. Trajectories: 21. Mean Length: 195.04761904761904.
812 completed
813 completed
814 completed
815 completed
816 completed
817 completed
818 Epoch: 98. DOWN     Mean Return: 1.429240107536316. Trajectories: 22. Mean Length: 186.1818181818182.
819 completed
820 completed
821 completed
822 completed
823 completed
824 completed
825 completed
826 completed
827 completed
828 completed
829 Epoch: 99. UP      Mean Return: 2.8372700214385986. Trajectories: 18. Mean Length: 227.55555555555554.
830 completed
831 completed
832 completed
833 completed
834 completed
835 completed
836 completed
837 completed
838 completed
839 saving models
840 Epoch: 100. DOWN    Mean Return: 2.7555060386657715. Trajectories: 17. Mean Length: 240.94117647058823.
841 Training completed _
```

842 Mean Reward [

File - main

```

842 >, <tf.Tensor: shape=(), dtype=float32, numpy=1.2946872>, <tf.Tensor: shape=(), dtype=float32, numpy=1.8140714>, <tf.Tensor: shape=(), dtype=float32, numpy=0.7030947>, <tf.Tensor: shape=(), dtype=float32, numpy=2.0228283>, <tf.Tensor: shape=(), dtype=float32, numpy=2.6521862>, <tf.Tensor: shape=(), dtype=float32, numpy=0.99814266>, <tf.Tensor: shape=(), dtype=float32, numpy=1.2702645>, <tf.Tensor: shape=(), dtype=float32, numpy=2.6520941>, <tf.Tensor: shape=(), dtype=float32, numpy=1.2802608>, <tf.Tensor: shape=(), dtype=float32, numpy=1.7883426>, <tf.Tensor: shape=(), dtype=float32, numpy=2.258107>, <tf.Tensor: shape=(), dtype=float32, numpy=1.5817752>, <tf.Tensor: shape=(), dtype=float32, numpy=1.7551947>, <tf.Tensor: shape=(), dtype=float32, numpy=0.6303671>, <tf.Tensor: shape=(), dtype=float32, numpy=0.9828993>, <tf.Tensor: shape=(), dtype=float32, numpy=3.4891727>, <tf.Tensor: shape=(), dtype=float32, numpy=1.5459814>, <tf.Tensor: shape=(), dtype=float32, numpy=1.3498924>, <tf.Tensor: shape=(), dtype=float32, numpy=2.055199>, <tf.Tensor: shape=(), dtype=float32, numpy=1.8249886>, <tf.Tensor: shape=(), dtype=float32, numpy=3.5840828>, <tf.Tensor: shape=(), dtype=float32, numpy=0.47583106>, <tf.Tensor: shape=(), dtype=float32, numpy=0.21652949>, <tf.Tensor: shape=(), dtype=float32, numpy=1.4399188>, <tf.Tensor: shape=(), dtype=float32, numpy=1.0731226>, <tf.Tensor: shape=(), dtype=float32, numpy=0.64227754>, <tf.Tensor: shape=(), dtype=float32, numpy=2.5931354>, <tf.Tensor: shape=(), dtype=float32, numpy=3.8660548>, <tf.Tensor: shape=(), dtype=float32, numpy=1.6220943>, <tf.Tensor: shape=(), dtype=float32, numpy=2.1808276>, <tf.Tensor: shape=(), dtype=float32, numpy=2.8795033>, <tf.Tensor: shape=(), dtype=float32, numpy=2.4274464>, <tf.Tensor: shape=(), dtype=float32, numpy=0.33770126>, <tf.Tensor: shape=(), dtype=float32, numpy=1.1629354>, <tf.Tensor: shape=(), dtype=float32, numpy=1.2417697>, <tf.Tensor: shape=(), dtype=float32, numpy=1.2273858>, <tf.Tensor: shape=(), dtype=float32, numpy=1.9439052>, <tf.Tensor: shape=(), dtype=float32, numpy=1.4292401>, <tf.Tensor: shape=(), dtype=float32, numpy=2.83727>, <tf.Tensor: shape=(), dtype=float32, numpy=2.7555606>]
843 Mean Length [141.24137931034483, 141.24137931034483, 163.84, 178.08695652173913, 215.57894736842104, 113.777777777777777777 , 151.7037037037037, 117.02857142857142, 186.1818181818182, 124.12121212121212, 141.24137931034483, 204.8, 128.0, 141. 24137931034483, 105.02564102564102, 107.78947368421052, 186.1818181818182, 157.53846153846155, 163.84, 170. 6666666666666666, 146.28571428571428, 240.94117647058823, 170.6666666666666666, 273.0666666666666666, 195.04761904761904, 113 .7777777777777777, 157.53846153846155, 163.84, 256.0, 178.08695652173913, 178.08695652173913, 195. 04761904761904, 204.8, 178.08695652173913, 186.1818181818182, 186.1818181818182, 170.6666666666666666 , 128.0, 195.04761904761904, 186.18181818182, 273.0666666666666666, 146.28571428571428, 204.8, 113.7777777777777777, 178. 08695652173913, 163.84, 146.28571428571428, 178.08695652173913, 151.7037037037037, 151.7037037037037, 256.0, 128.0, 204 .8, 178.08695652173913, 170.6666666666666666, 227.555555555555554, 163.84, 178.08695652173913, 215.57894736842104, 151. 7037037037037, 215.57894736842104, 240.94117647058823, 170.6666666666666666, 240.94117647058823, 227. 55555555555554, 178.08695652173913, 204.8, 204.8, 178.08695652173913, 204.8, 128.0, 186.18181818182, 273. 0666666666666666, 195.04761904761904, 195.04761904761904, 227.55555555555554, 186.18181818182, 273.0666666666666666, 151. 7037037037037, 132.1290322580645, 204.8, 157.53846153846155, 163.84, 240.94117647058823, 315.0769230769231, 186. 18181818182, 204.8, 240.94117647058823, 215.57894736842104, 141.24137931034483, 163.84, 186.18181818182, 186. 18181818182, 195.04761904761904, 186.18181818182, 227.55555555555554, 240.94117647058823]
844 loading NN from: saved_model
845 CURRENT ACTOR-CRITIC NETWORK IN USE
846 Model: "ActorNet"
847 -----
848 Layer (type)          Output Shape         Param #  Connected to
849 =====
850 input_1 (InputLayer)  [(None, 5)]        0
851 -----
852 acc_1 (Dense)         (None, 128)        768      input_1[0][0]
853 -----
854 dir_1 (Dense)         (None, 128)        768      input_1[0][0]
855 -----
856 acc_2 (Dense)         (None, 128)        16512    acc_1[0][0]
857 -----
858 dir_2 (Dense)         (None, 128)        16512    dir_1[0][0]
859 -----
860 acc_3 (Dense)         (None, 128)        16512    acc_2[0][0]
861 -----
862 dir_3 (Dense)         (None, 128)        16512    dir_2[0][0]
863 -----
864 acc_out_mu (Dense)   (None, 1)           129      acc_3[0][0]
865 -----
866 dir_out_mu (Dense)   (None, 1)           129      dir_3[0][0]
867 -----
868 concatenate (Concatenate) (None, 2)        0        acc_out_mu[0][0]
869                               dir_out_mu[0][0]
870 -----
871 Total params: 67,842
872 Trainable params: 67,842
873 Non-trainable params: 0
874 -----
875 Model: "CriticNet"
876 -----
877 Layer (type)          Output Shape         Param #
878 =====
879 input_2 (InputLayer)  [(None, 5)]        0
880 -----
881 layer_1 (Dense)       (None, 128)        768
882 -----
883 layer_2 (Dense)       (None, 128)        16512
884 -----
885 layer_3 (Dense)       (None, 128)        16512
886 -----
887 dense (Dense)         (None, 1)           129
888 -----
889 Total params: 33,921
890 Trainable params: 33,921
891 Non-trainable params: 0
892 -----
893 2022-01-31 14:44:27.647002: 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
894 completed
895 completed
896 completed

```

```

File - main
897 completed
898 completed
899 completed
900 completed
901 completed
902 completed
903 completed
904 completed
905 completed
906 completed
907 completed
908 completed
909 completed
910 completed
911 completed
912 completed
913 completed
914 completed
915 completed
916 completed
917 completed
918 completed
919 completed
920 completed
921 completed
922 completed
923 completed
924 completed
925 completed
926 completed
927 completed
928 test saved_model : mean steps : 187. mean rewards : 1.5094192028045654
929 loading NN from: saved_best_model
930 CURRENT ACTOR-CRITIC NETWORK IN USE
931 Model: "ActorNet"
932 -----
933 Layer (type)          Output Shape       Param #  Connected to
934 =====
935 input_1 (InputLayer)   [(None, 5)]        0
936
937 acc_1 (Dense)         (None, 128)        768      input_1[0][0]
938
939 dir_1 (Dense)         (None, 128)        768      input_1[0][0]
940
941 acc_2 (Dense)         (None, 128)        16512    acc_1[0][0]
942
943 dir_2 (Dense)         (None, 128)        16512    dir_1[0][0]
944
945 acc_3 (Dense)         (None, 128)        16512    acc_2[0][0]
946
947 dir_3 (Dense)         (None, 128)        16512    dir_2[0][0]
948
949 acc_out_mu (Dense)   (None, 1)           129      acc_3[0][0]
950
951 dir_out_mu (Dense)   (None, 1)           129      dir_3[0][0]
952
953 concatenate (Concatenate) (None, 2)        0        acc_out_mu[0][0]
954                                         dir_out_mu[0][0]
955 =====
956 Total params: 67,842
957 Trainable params: 67,842
958 Non-trainable params: 0
959
960 Model: "CriticNet"
961 -----
962 Layer (type)          Output Shape       Param #
963 =====
964 input_2 (InputLayer)   [(None, 5)]        0
965
966 layer_1 (Dense)       (None, 128)        768
967
968 layer_2 (Dense)       (None, 128)        16512
969
970 layer_3 (Dense)       (None, 128)        16512
971
972 dense (Dense)         (None, 1)           129
973 =====
974 Total params: 33,921
975 Trainable params: 33,921
976 Non-trainable params: 0
977
978 2022-01-31 14:45:19.446555: 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
979 completed
980 completed
981 completed
982 completed
983 completed
984 completed

```

File - main

```
985 completed
986 completed
987 completed
988 completed
989 completed
990 completed
991 completed
992 completed
993 completed
994 completed
995 completed
996 completed
997 completed
998 completed
999 completed
1000 completed
1001 completed
1002 completed
1003 completed
1004 completed
1005 completed
1006 completed
1007 completed
1008 completed
1009 completed
1010 completed
1011 completed
1012 completed
1013 test saved_best_model : mean steps : 185. mean rewards : 1.402809739112854
1014
1015 Process finished with exit code 0
1016
```