

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 10:18:13.927601: 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 10:18:13.927748: 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 10:18:17.463700: 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 10:18:17.463972: 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 10:18:17.464234: 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 10:18:17.464490: 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 10:18:17.464739: 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 10:18:17.465004: 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 10:18:17.465264: 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 10:18:17.465524: 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 10:18:17.465664: 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 10:18:17.466149: 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 CURRENT ACTOR-CRITIC NETWORK IN USE
17 Model: "ActorNet"
18 -----
19 Layer (type)          Output Shape         Param #  Connected to
20 =====
21 input_1 (InputLayer) [(None, 5)]          0
22 -----
23 acc_1 (Dense)        (None, 128)          768      input_1[0][0]
24 -----
25 dir_1 (Dense)        (None, 128)          768      input_1[0][0]
26 -----
27 acc_2 (Dense)        (None, 128)          16512    acc_1[0][0]
28 -----
29 dir_2 (Dense)        (None, 128)          16512    dir_1[0][0]
30 -----
31 acc_3 (Dense)        (None, 128)          16512    acc_2[0][0]
32 -----
33 dir_3 (Dense)        (None, 128)          16512    dir_2[0][0]
34 -----
35 acc_out_mu (Dense)   (None, 1)             129      acc_3[0][0]
36 -----
37 dir_out_mu (Dense)   (None, 1)             129      dir_3[0][0]
38 -----
39 concatenate (Concatenate) (None, 2)          0      acc_out_mu[0][0]
40                               dir_out_mu[0][0]
41 -----
42 Total params: 67,842
43 Trainable params: 67,842
44 Non-trainable params: 0
45 -----
46 Model: "CriticNet"
47 -----
48 Layer (type)          Output Shape         Param #
49 =====
50 input_2 (InputLayer) [(None, 5)]          0
51 -----
52 layer_1 (Dense)       (None, 128)          768
53 -----
54 layer_2 (Dense)       (None, 128)          16512
55 -----
56 layer_3 (Dense)       (None, 128)          16512
57 -----
58 dense (Dense)         (None, 1)             129
59 -----
60 Total params: 33,921
61 Trainable params: 33,921
62 Non-trainable params: 0
63 -----
64 Started Training ...
65 Hyperparameters:
66 Actor_lr 3e-05. Critic_lr 0.0001. clip_value 0.1. N_epochs 200. steps_per_epoch 4096. train_iteraion 50.
target_mean_diff 0.0225.
67 2022-01-31 10:18:18.158615: I tensorflow/compiler/mlir/mlir_graph_optimization_pass.cc:185] None of the MLIR
Optimization Passes are enabled (registered 2)
68 2022-01-31 10:18:18.220713: 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
69 2022-01-31 10:19:45.009418: W tensorflow/core/grappler/optimizers/loop_optimizer.cc:907] Skipping loop optimization for
Merge node with control input: StatefulPartitionedCall/direction_norm/assert_positive/assert_less/Assert/AssertGuard/
branch_executed/_487
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70 2022-01-31 10:19:49.586929: 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.
71 Epoch: 1. UP Best ! Mean Return: -2.8542983531951904. Trajectories: 332. Mean Length: 12.337349397590362.
72 Epoch: 2. UP Best ! Mean Return: -2.8449835777282715. Trajectories: 222. Mean Length: 18.45045045045045.
73 Epoch: 3. UP Best ! Mean Return: -2.843430757522583. Trajectories: 300. Mean Length: 13.653333333333334.
74 Epoch: 4. DOWN Mean Return: -2.8512532711029053. Trajectories: 269. Mean Length: 15.226765799256505.
75 Epoch: 5. UP Mean Return: -2.8484275341033936. Trajectories: 184. Mean Length: 22.26086956521739.
76 Epoch: 6. UP Mean Return: -2.845568337020874. Trajectories: 233. Mean Length: 17.5793991416309.
77 Epoch: 7. UP Best ! Mean Return: -2.842742443084717. Trajectories: 185. Mean Length: 22.14054054054054.
78 Epoch: 8. UP Best ! Mean Return: -2.8375608921051025. Trajectories: 282. Mean Length: 14.52482269503546.
79 Epoch: 9. DOWN Mean Return: -2.837954521179199. Trajectories: 267. Mean Length: 15.340823970037453.
80 saving models
81 Epoch: 10. DOWN Mean Return: -2.842409610748291. Trajectories: 238. Mean Length: 17.210084033613445.
82 Epoch: 11. UP Best ! Mean Return: -2.8288533687591553. Trajectories: 208. Mean Length: 19.692307692307693.
83 Epoch: 12. UP Best ! Mean Return: -2.791459798812866. Trajectories: 124. Mean Length: 33.03225806451613.
84 Epoch: 13. DOWN Mean Return: -2.7985928058624268. Trajectories: 164. Mean Length: 24.975609756097562.
85 Epoch: 14. DOWN Mean Return: -2.815518379211426. Trajectories: 187. Mean Length: 21.90374331550802.
86 Epoch: 15. UP Mean Return: -2.792938470840454. Trajectories: 136. Mean Length: 30.11764705882353.
87 Epoch: 16. DOWN Mean Return: -2.821969509124756. Trajectories: 129. Mean Length: 31.751937984496124.
88 Epoch: 17. UP Best ! Mean Return: -2.789883613586426. Trajectories: 146. Mean Length: 28.054794520547944.
89 Epoch: 18. UP Best ! Mean Return: -2.7744457721710205. Trajectories: 144. Mean Length: 28.4444444444444443.
90 Epoch: 19. UP Best ! Mean Return: -2.7522547245025635. Trajectories: 114. Mean Length: 35.92982456140351.
91 saving models
92 Epoch: 20. UP Best ! Mean Return: -2.739020824432373. Trajectories: 98. Mean Length: 41.795918367346935.
93 Epoch: 21. UP Best ! Mean Return: -2.689440965652466. Trajectories: 82. Mean Length: 49.951219512195124.
94 Epoch: 22. DOWN Mean Return: -2.749831438064575. Trajectories: 124. Mean Length: 33.03225806451613.
95 Epoch: 23. UP Best ! Mean Return: -2.6139581203460693. Trajectories: 62. Mean Length: 66.06451612903226.
96 Epoch: 24. DOWN Mean Return: -2.685974359512329. Trajectories: 82. Mean Length: 49.951219512195124.
97 Epoch: 25. DOWN Mean Return: -2.737163543701172. Trajectories: 122. Mean Length: 33.57377049180328.
98 Epoch: 26. DOWN Mean Return: -2.7431819438934326. Trajectories: 130. Mean Length: 31.50769230769231.
99 Epoch: 27. UP Mean Return: -2.738311767578125. Trajectories: 107. Mean Length: 38.2803738317757.
100 Epoch: 28. UP Best ! Mean Return: -2.5983731746673584. Trajectories: 46. Mean Length: 89.04347826086956.
101 Epoch: 29. DOWN Mean Return: -2.6085011959075928. Trajectories: 65. Mean Length: 63.01538461538462.
102 saving models
103 Epoch: 30. DOWN Mean Return: -2.7212514877319336. Trajectories: 83. Mean Length: 49.34939759036145.
104 Epoch: 31. DOWN Mean Return: -2.748148202896118. Trajectories: 164. Mean Length: 24.975609756097562.
105 Epoch: 32. UP Mean Return: -2.6125364303588867. Trajectories: 82. Mean Length: 49.951219512195124.
106 Epoch: 33. DOWN Mean Return: -2.7082738876342773. Trajectories: 133. Mean Length: 30.796992481203006.
107 Epoch: 34. UP Mean Return: -2.689624309539795. Trajectories: 117. Mean Length: 35.00854700854701.
108 Epoch: 35. UP Mean Return: -2.6264758110046387. Trajectories: 79. Mean Length: 51.848101265822784.
109 Epoch: 36. UP Mean Return: -2.61272730922698975. Trajectories: 75. Mean Length: 54.613333333333334.
110 Epoch: 37. DOWN Mean Return: -2.6778957843780518. Trajectories: 125. Mean Length: 32.768.
111 Epoch: 38. UP Mean Return: -2.6182684898376465. Trajectories: 74. Mean Length: 55.351351351351354.
112 Epoch: 39. DOWN Mean Return: -2.6543424129486084. Trajectories: 104. Mean Length: 39.38461538461539.
113 saving models
114 Epoch: 40. DOWN Mean Return: -2.6716623306274414. Trajectories: 129. Mean Length: 31.751937984496124.
115 Epoch: 41. UP Mean Return: -2.6029300689697266. Trajectories: 111. Mean Length: 36.9009009009009.
116 Epoch: 42. UP Best ! Mean Return: -2.598109245300293. Trajectories: 105. Mean Length: 39.00952380952381.
117 Epoch: 43. UP Best ! Mean Return: -2.50439715385437. Trajectories: 67. Mean Length: 61.134328358208954.
118 Epoch: 44. DOWN Mean Return: -2.569845199584961. Trajectories: 85. Mean Length: 48.188235294117646.
119 Epoch: 45. UP Best ! Mean Return: -2.4789867401123047. Trajectories: 62. Mean Length: 66.06451612903226.
120 Epoch: 46. DOWN Mean Return: -2.501859664916992. Trajectories: 62. Mean Length: 66.06451612903226.
121 Epoch: 47. UP Best ! Mean Return: -2.4208803176879883. Trajectories: 49. Mean Length: 83.59183673469387.
122 Epoch: 48. DOWN Mean Return: -2.5847229957580566. Trajectories: 83. Mean Length: 49.34939759036145.
123 Epoch: 49. UP Best ! Mean Return: -2.305070161819458. Trajectories: 37. Mean Length: 110.70270270270271.
124 saving models
125 Epoch: 50. DOWN Mean Return: -2.622995138168335. Trajectories: 69. Mean Length: 59.36231884057971.
126 Epoch: 51. UP Best ! Mean Return: -1.9198744297027588. Trajectories: 20. Mean Length: 204.8.
127 Epoch: 52. DOWN Mean Return: -2.303896188735962. Trajectories: 45. Mean Length: 91.022222222222223.
128 Epoch: 53. UP Mean Return: -2.2377939224243164. Trajectories: 36. Mean Length: 113.777777777777777.
129 completed
130 Epoch: 54. UP Mean Return: -2.121220827102661. Trajectories: 32. Mean Length: 128.0.
131 Epoch: 55. DOWN Mean Return: -2.4202232360839844. Trajectories: 57. Mean Length: 71.85964912280701.
132 Epoch: 56. UP Mean Return: -2.239400625228882. Trajectories: 33. Mean Length: 124.12121212121212.
133 Epoch: 57. UP Mean Return: -1.9303393363952637. Trajectories: 24. Mean Length: 170.66666666666666.
134 Epoch: 58. DOWN Mean Return: -2.513880491256714. Trajectories: 70. Mean Length: 58.51428571428571.
135 Epoch: 59. UP Mean Return: -2.437551498413086. Trajectories: 73. Mean Length: 56.10958904109589.
136 completed
137 saving models
138 Epoch: 60. UP Mean Return: -2.2262775897979736. Trajectories: 50. Mean Length: 81.92.
139 Epoch: 61. DOWN Mean Return: -2.236502647399023. Trajectories: 46. Mean Length: 89.04347826086956.
140 Epoch: 62. UP Mean Return: -2.0773255825042725. Trajectories: 29. Mean Length: 141.24137931034483.
141 completed
142 Epoch: 63. UP Mean Return: -1.9718210697174072. Trajectories: 38. Mean Length: 107.78947368421052.
143 Epoch: 64. DOWN Mean Return: -2.1519618034362793. Trajectories: 41. Mean Length: 99.90243902439025.
144 Epoch: 65. UP Best ! Mean Return: -1.8578951358795166. Trajectories: 28. Mean Length: 146.28571428571428.
145 Epoch: 66. UP Best ! Mean Return: -1.798704981803894. Trajectories: 27. Mean Length: 151.7037037037037.
146 Epoch: 67. DOWN Mean Return: -1.9801479578018188. Trajectories: 39. Mean Length: 105.02564102564102.
147 Epoch: 68. DOWN Mean Return: -2.004744529724121. Trajectories: 35. Mean Length: 117.02857142857142.
148 Epoch: 69. DOWN Mean Return: -2.2995681762695312. Trajectories: 56. Mean Length: 73.14285714285714.
149 completed
150 saving models
151 Epoch: 70. UP Best ! Mean Return: -1.758025050163269. Trajectories: 29. Mean Length: 141.24137931034483.
152 Epoch: 71. DOWN Mean Return: -2.2552573680877686. Trajectories: 52. Mean Length: 78.76923076923077.
153 Epoch: 72. UP Mean Return: -2.0554513931274414. Trajectories: 41. Mean Length: 99.90243902439025.
154 completed
155 Epoch: 73. UP Best ! Mean Return: -1.6782557964324951. Trajectories: 23. Mean Length: 178.08695652173913.
156 Epoch: 74. DOWN Mean Return: -1.8780826330184937. Trajectories: 37. Mean Length: 110.70270270270271.
157 Epoch: 75. DOWN Mean Return: -2.226585626602173. Trajectories: 56. Mean Length: 73.14285714285714.

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158 Epoch: 76. UP Mean Return: -2.205503225326538. Trajectories: 50. Mean Length: 81.92.
159 Epoch: 77. UP Mean Return: -2.0835559368133545. Trajectories: 40. Mean Length: 102.4.
160 completed
161 Epoch: 78. UP Mean Return: -1.9557918310165405. Trajectories: 37. Mean Length: 110.70270270270271.
162 Epoch: 79. DOWN Mean Return: -2.110633611679077. Trajectories: 44. Mean Length: 93.0909090909091.
163 saving models
164 Epoch: 80. UP Mean Return: -1.9701709747314453. Trajectories: 44. Mean Length: 93.0909090909091.
165 Epoch: 81. DOWN Mean Return: -2.30229976348877. Trajectories: 60. Mean Length: 68.26666666666667.
166 Epoch: 82. UP Mean Return: -1.9115971326828003. Trajectories: 32. Mean Length: 128.0.
167 Epoch: 83. DOWN Mean Return: -1.9345216751098633. Trajectories: 32. Mean Length: 128.0.
168 Epoch: 84. DOWN Mean Return: -1.985577940940857. Trajectories: 39. Mean Length: 105.02564102564102.
169 completed
170 Epoch: 85. UP Mean Return: -1.8974024057388306. Trajectories: 43. Mean Length: 95.25581395348837.
171 completed
172 Epoch: 86. UP Mean Return: -1.8147364854812622. Trajectories: 37. Mean Length: 110.70270270270271.
173 completed
174 Epoch: 87. UP Mean Return: -1.7641746997833252. Trajectories: 40. Mean Length: 102.4.
175 completed
176 completed
177 Epoch: 88. DOWN Mean Return: -1.801875114440918. Trajectories: 38. Mean Length: 107.78947368421052.
178 Epoch: 89. DOWN Mean Return: -2.0679657459259033. Trajectories: 43. Mean Length: 95.25581395348837.
179 completed
180 saving models
181 Epoch: 90. UP Mean Return: -1.695539116859436. Trajectories: 31. Mean Length: 132.1290322580645.
182 completed
183 Epoch: 91. DOWN Mean Return: -2.034611225128174. Trajectories: 45. Mean Length: 91.02222222222223.
184 completed
185 Epoch: 92. UP Mean Return: -1.875512957572937. Trajectories: 35. Mean Length: 117.02857142857142.
186 completed
187 Epoch: 93. UP Best ! Mean Return: -1.5755187273025513. Trajectories: 28. Mean Length: 146.28571428571428.
188 Epoch: 94. DOWN Mean Return: -1.7214875221252441. Trajectories: 30. Mean Length: 136.53333333333333.
189 completed
190 Epoch: 95. UP Best ! Mean Return: -1.3228392601013184. Trajectories: 30. Mean Length: 136.53333333333333.
191 Epoch: 96. DOWN Mean Return: -2.0132644176483154. Trajectories: 50. Mean Length: 81.92.
192 completed
193 Epoch: 97. UP Best ! Mean Return: -1.2009239196777344. Trajectories: 22. Mean Length: 186.18181818182.
194 completed
195 Epoch: 98. DOWN Mean Return: -1.4301156997680664. Trajectories: 31. Mean Length: 132.1290322580645.
196 completed
197 Epoch: 99. DOWN Mean Return: -1.8279151916503906. Trajectories: 38. Mean Length: 107.78947368421052.
198 saving models
199 Epoch: 100. DOWN Mean Return: -1.9827768802642822. Trajectories: 45. Mean Length: 91.0222222222223.
200 completed
201 Epoch: 101. UP Best ! Mean Return: -0.9912206530570984. Trajectories: 24. Mean Length: 170.66666666666666.
202 completed
203 Epoch: 102. DOWN Mean Return: -1.4968740940093994. Trajectories: 30. Mean Length: 136.53333333333333.
204 completed
205 completed
206 Epoch: 103. UP Mean Return: -1.1944712400436401. Trajectories: 26. Mean Length: 157.53846153846155.
207 Epoch: 104. DOWN Mean Return: -1.8390486240386963. Trajectories: 45. Mean Length: 91.0222222222223.
208 completed
209 completed
210 Epoch: 105. UP Mean Return: -1.6609206199645996. Trajectories: 37. Mean Length: 110.70270270270271.
211 completed
212 Epoch: 106. DOWN Mean Return: -1.8328877687454224. Trajectories: 44. Mean Length: 93.0909090909091.
213 Epoch: 107. DOWN Mean Return: -1.8455135822296143. Trajectories: 45. Mean Length: 91.0222222222223.
214 completed
215 completed
216 Epoch: 108. UP Mean Return: -1.1878474950790405. Trajectories: 28. Mean Length: 146.28571428571428.
217 completed
218 Epoch: 109. DOWN Mean Return: -1.909635305404663. Trajectories: 45. Mean Length: 91.0222222222223.
219 completed
220 saving models
221 Epoch: 110. UP Mean Return: -1.6567354202270508. Trajectories: 40. Mean Length: 102.4.
222 completed
223 Epoch: 111. DOWN Mean Return: -1.6940969228744507. Trajectories: 42. Mean Length: 97.52380952380952.
224 completed
225 completed
226 Epoch: 112. DOWN Mean Return: -1.7524954080581665. Trajectories: 42. Mean Length: 97.52380952380952.
227 Epoch: 113. UP Mean Return: -1.562434434890747. Trajectories: 39. Mean Length: 105.02564102564102.
228 completed
229 completed
230 Epoch: 114. UP Mean Return: -1.2392414808273315. Trajectories: 31. Mean Length: 132.1290322580645.
231 completed
232 completed
233 Epoch: 115. DOWN Mean Return: -1.663794755935669. Trajectories: 40. Mean Length: 102.4.
234 completed
235 completed
236 Epoch: 116. UP Mean Return: -1.0986138582229614. Trajectories: 28. Mean Length: 146.28571428571428.
237 completed
238 Epoch: 117. DOWN Mean Return: -1.896431803703308. Trajectories: 55. Mean Length: 74.47272727272727.
239 completed
240 completed
241 Epoch: 118. UP Mean Return: -1.3076801300048828. Trajectories: 33. Mean Length: 124.12121212121212.
242 completed
243 completed
244 Epoch: 119. UP Mean Return: -1.219950556755066. Trajectories: 32. Mean Length: 128.0.
245 completed
246 saving models

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247 Epoch: 120. DOWN Mean Return: -1.5147719383239746. Trajectories: 33. Mean Length: 124.121212121212.
248 completed
249 Epoch: 121. DOWN Mean Return: -1.519585132598877. Trajectories: 38. Mean Length: 107.78947368421052.
250 completed
251 completed
252 Epoch: 122. UP Best ! Mean Return: -0.6290082335472107. Trajectories: 22. Mean Length: 186.1818181818182.
253 completed
254 Epoch: 123. DOWN Mean Return: -1.7889536619186401. Trajectories: 48. Mean Length: 85.3333333333333.
255 completed
256 Epoch: 124. UP Mean Return: -1.3374096155166626. Trajectories: 32. Mean Length: 128.0.
257 completed
258 Epoch: 125. DOWN Mean Return: -1.7039000988006592. Trajectories: 39. Mean Length: 105.02564102564102.
259 completed
260 Epoch: 126. DOWN Mean Return: -1.7391411066055298. Trajectories: 41. Mean Length: 99.90243902439025.
261 completed
262 completed
263 completed
264 completed
265 Epoch: 127. UP Mean Return: -0.7638598680496216. Trajectories: 26. Mean Length: 157.53846153846155.
266 completed
267 completed
268 Epoch: 128. DOWN Mean Return: -1.7351723909378052. Trajectories: 47. Mean Length: 87.14893617021276.
269 completed
270 completed
271 completed
272 Epoch: 129. UP Mean Return: -1.0544687509536743. Trajectories: 28. Mean Length: 146.28571428571428.
273 completed
274 completed
275 completed
276 completed
277 saving models
278 Epoch: 130. UP Mean Return: -0.8621670007705688. Trajectories: 31. Mean Length: 132.1290322580645.
279 completed
280 completed
281 completed
282 completed
283 Epoch: 131. UP Best ! Mean Return: 0.07477278262376785. Trajectories: 19. Mean Length: 215.57894736842104.
284 completed
285 Epoch: 132. DOWN Mean Return: -0.8637037873268127. Trajectories: 23. Mean Length: 178.08695652173913.
286 completed
287 completed
288 completed
289 Epoch: 133. DOWN Mean Return: -0.8958993554115295. Trajectories: 30. Mean Length: 136.533333333333.
290 completed
291 completed
292 Epoch: 134. DOWN Mean Return: -1.2721294164657593. Trajectories: 37. Mean Length: 110.70270270270271.
293 completed
294 Epoch: 135. UP Mean Return: -1.008838176727295. Trajectories: 28. Mean Length: 146.28571428571428.
295 Epoch: 136. DOWN Mean Return: -1.1330255270004272. Trajectories: 27. Mean Length: 151.7037037037037.
296 completed
297 completed
298 completed
299 Epoch: 137. DOWN Mean Return: -1.3156551122665405. Trajectories: 41. Mean Length: 99.90243902439025.
300 completed
301 completed
302 Epoch: 138. UP Mean Return: -1.11968195438385. Trajectories: 28. Mean Length: 146.28571428571428.
303 completed
304 completed
305 completed
306 Epoch: 139. UP Mean Return: -1.0722808837890625. Trajectories: 30. Mean Length: 136.533333333333.
307 completed
308 completed
309 saving models
310 Epoch: 140. UP Mean Return: -0.964275598526001. Trajectories: 30. Mean Length: 136.533333333333.
311 completed
312 completed
313 Epoch: 141. DOWN Mean Return: -1.3936572074890137. Trajectories: 39. Mean Length: 105.02564102564102.
314 completed
315 completed
316 completed
317 Epoch: 142. UP Mean Return: -0.4324190616607666. Trajectories: 24. Mean Length: 170.66666666666666.
318 completed
319 completed
320 completed
321 Epoch: 143. UP Mean Return: -0.35215437412261963. Trajectories: 24. Mean Length: 170.66666666666666.
322 completed
323 Epoch: 144. DOWN Mean Return: -1.4195173978805542. Trajectories: 40. Mean Length: 102.4.
324 completed
325 Epoch: 145. UP Mean Return: -1.357846975326538. Trajectories: 38. Mean Length: 107.78947368421052.
326 completed
327 completed
328 Epoch: 146. UP Mean Return: -1.1948788166046143. Trajectories: 35. Mean Length: 117.02857142857142.
329 completed
330 completed
331 Epoch: 147. DOWN Mean Return: -1.2682901620864868. Trajectories: 34. Mean Length: 120.47058823529412.
332 completed
333 completed
334 completed
335 completed

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336 Epoch: 148. UP Mean Return: -0.54184490442276. Trajectories: 28. Mean Length: 146.28571428571428.
337 completed
338 Epoch: 149. DOWN Mean Return: -1.57417631149292. Trajectories: 46. Mean Length: 89.04347826086956.
339 completed
340 completed
341 saving models
342 Epoch: 150. DOWN Mean Return: -1.7273892164230347. Trajectories: 51. Mean Length: 80.31372549019608.
343 completed
344 completed
345 completed
346 Epoch: 151. UP Mean Return: -0.23076778650283813. Trajectories: 22. Mean Length: 186.18181818182.
347 completed
348 Epoch: 152. DOWN Mean Return: -1.0628260374069214. Trajectories: 29. Mean Length: 141.24137931034483.
349 completed
350 completed
351 completed
352 Epoch: 153. UP Mean Return: -0.7458161115646362. Trajectories: 28. Mean Length: 146.28571428571428.
353 Epoch: 154. UP Mean Return: -0.5024492740631104. Trajectories: 24. Mean Length: 170.66666666666666.
354 completed
355 completed
356 completed
357 Epoch: 155. DOWN Mean Return: -1.3726284503936768. Trajectories: 45. Mean Length: 91.0222222222223.
358 completed
359 completed
360 completed
361 Epoch: 156. UP Mean Return: -0.7943299412727356. Trajectories: 31. Mean Length: 132.1290322580645.
362 completed
363 completed
364 completed
365 Epoch: 157. DOWN Mean Return: -0.849879264831543. Trajectories: 28. Mean Length: 146.28571428571428.
366 completed
367 Epoch: 158. DOWN Mean Return: -1.2107402086257935. Trajectories: 33. Mean Length: 124.12121212121212.
368 completed
369 completed
370 Epoch: 159. UP Mean Return: -0.7454395294189453. Trajectories: 29. Mean Length: 141.24137931034483.
371 completed
372 completed
373 saving models
374 Epoch: 160. DOWN Mean Return: -1.100477695465088. Trajectories: 38. Mean Length: 107.78947368421052.
375 completed
376 completed
377 completed
378 completed
379 completed
380 Epoch: 161. UP Mean Return: -0.18114644289016724. Trajectories: 26. Mean Length: 157.53846153846155.
381 completed
382 completed
383 Epoch: 162. DOWN Mean Return: -1.4776841402053833. Trajectories: 48. Mean Length: 85.3333333333333.
384 completed
385 completed
386 completed
387 completed
388 completed
389 Epoch: 163. UP Best ! Mean Return: 1.6703678369522095. Trajectories: 15. Mean Length: 273.0666666666666.
390 completed
391 completed
392 Epoch: 164. DOWN Mean Return: 0.4125746488571167. Trajectories: 18. Mean Length: 227.55555555555554.
393 completed
394 completed
395 completed
396 completed
397 completed
398 Epoch: 165. DOWN Mean Return: -0.7414507269859314. Trajectories: 34. Mean Length: 120.47058823529412.
399 completed
400 completed
401 Epoch: 166. UP Mean Return: -0.1936970055103302. Trajectories: 21. Mean Length: 195.04761904761904.
402 completed
403 completed
404 completed
405 Epoch: 167. DOWN Mean Return: -0.5524397492408752. Trajectories: 30. Mean Length: 136.5333333333333.
406 completed
407 completed
408 completed
409 completed
410 Epoch: 168. UP Mean Return: -0.4167642593383789. Trajectories: 27. Mean Length: 151.7037037037037.
411 completed
412 completed
413 completed
414 completed
415 Epoch: 169. UP Mean Return: -0.2987041771411896. Trajectories: 27. Mean Length: 151.7037037037037.
416 completed
417 completed
418 completed
419 completed
420 saving models
421 Epoch: 170. DOWN Mean Return: -0.3684201240539551. Trajectories: 28. Mean Length: 146.28571428571428.
422 completed
423 completed
424 completed

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425 completed
426 completed
427 completed
428 Epoch: 171. UP      Mean Return: 0.16089901328086853.    Trajectories: 25.    Mean Length: 163.84.
429 completed
430 completed
431 completed
432 completed
433 Epoch: 172. DOWN    Mean Return: -0.49006474018096924.   Trajectories: 31.    Mean Length: 132.1290322580645.
434 completed
435 Epoch: 173. DOWN    Mean Return: -0.7860315442085266.   Trajectories: 37.    Mean Length: 110.70270270270271.
436 completed
437 Epoch: 174. DOWN    Mean Return: -0.9895610809326172.   Trajectories: 32.    Mean Length: 128.0.
438 completed
439 completed
440 completed
441 Epoch: 175. UP      Mean Return: -0.87732994556427.   Trajectories: 33.    Mean Length: 124.121212121212.
442 completed
443 completed
444 Epoch: 176. DOWN    Mean Return: -0.9886173605918884.   Trajectories: 37.    Mean Length: 110.70270270270271.
445 completed
446 completed
447 completed
448 completed
449 completed
450 Epoch: 177. UP      Mean Return: 1.1375012397766113.   Trajectories: 18.    Mean Length: 227.55555555555554.
451 completed
452 completed
453 Epoch: 178. DOWN    Mean Return: -0.8576884269714355.   Trajectories: 36.    Mean Length: 113.77777777777777.
454 completed
455 completed
456 completed
457 Epoch: 179. UP      Mean Return: -0.305591344833374.   Trajectories: 28.    Mean Length: 146.28571428571428.
458 completed
459 completed
460 completed
461 completed
462 completed
463 completed
464 saving models
465 Epoch: 180. UP      Mean Return: -0.11086660623550415.  Trajectories: 31.    Mean Length: 132.1290322580645.
466 completed
467 completed
468 completed
469 completed
470 Epoch: 181. DOWN    Mean Return: -0.5652897953987122.  Trajectories: 31.    Mean Length: 132.1290322580645.
471 completed
472 completed
473 completed
474 completed
475 completed
476 Epoch: 182. UP  Best ! Mean Return: 1.7779816389083862. Trajectories: 16.    Mean Length: 256.0.
477 completed
478 completed
479 completed
480 Epoch: 183. DOWN    Mean Return: -0.563106894493103.   Trajectories: 35.    Mean Length: 117.02857142857142.
481 completed
482 completed
483 completed
484 completed
485 Epoch: 184. DOWN    Mean Return: -0.6579388380050659.   Trajectories: 34.    Mean Length: 120.47058823529412.
486 completed
487 completed
488 completed
489 completed
490 completed
491 Epoch: 185. UP      Mean Return: 0.5189619660377502.   Trajectories: 23.    Mean Length: 178.08695652173913.
492 completed
493 completed
494 Epoch: 186. DOWN    Mean Return: -0.9209405183792114.   Trajectories: 35.    Mean Length: 117.02857142857142.
495 completed
496 Epoch: 187. DOWN    Mean Return: -1.1850683689117432.   Trajectories: 40.    Mean Length: 102.4.
497 completed
498 completed
499 completed
500 Epoch: 188. UP      Mean Return: -0.008351554162800312.  Trajectories: 23.    Mean Length: 178.08695652173913.
501 completed
502 completed
503 completed
504 completed
505 Epoch: 189. UP      Mean Return: 0.3468935489654541.   Trajectories: 23.    Mean Length: 178.08695652173913.
506 completed
507 completed
508 completed
509 completed
510 completed
511 saving models
512 Epoch: 190. UP      Mean Return: 0.5800560116767883.   Trajectories: 22.    Mean Length: 186.1818181818182.
513 completed

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```
514 completed
515 completed
516 Epoch: 191. DOWN      Mean Return: -0.6340864896774292.    Trajectories: 38.    Mean Length: 107.78947368421052.
517 completed
518 completed
519 completed
520 Epoch: 192. UP        Mean Return: -0.5445622801780701.    Trajectories: 31.    Mean Length: 132.1290322580645.
521 completed
522 completed
523 completed
524 completed
525 completed
526 completed
527 completed
528 completed
529 completed
530 Epoch: 194. UP        Mean Return: 1.4005247354507446. Trajectories: 19.    Mean Length: 215.57894736842104.
531 completed
532 completed
533 completed
534 Epoch: 195. DOWN      Mean Return: -0.10473586618900299.   Trajectories: 27.    Mean Length: 151.7037037037037.
535 completed
536 completed
537 completed
538 completed
539 Epoch: 196. UP        Mean Return: 0.15036551654338837.   Trajectories: 27.    Mean Length: 151.7037037037037.
540 completed
541 completed
542 completed
543 completed
544 completed
545 completed
546 Epoch: 197. UP  Best ! Mean Return: 1.9015177488327026. Trajectories: 17.    Mean Length: 240.94117647058823.
547 completed
548 completed
549 completed
550 completed
551 Epoch: 198. DOWN      Mean Return: 0.6571764945983887. Trajectories: 23.    Mean Length: 178.08695652173913.
552 completed
553 completed
554 completed
555 completed
556 completed
557 completed
558 Epoch: 199. UP        Mean Return: 1.0348047018051147. Trajectories: 21.    Mean Length: 195.04761904761904.
559 completed
560 completed
561 completed
562 completed
563 completed
564 saving models
565 Epoch: 200. DOWN      Mean Return: -0.6353670954704285.   Trajectories: 40.    Mean Length: 102.4.
566 Training completed _
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File - main

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File - main

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569 loading NN from: saved_model  
570 CURRENT ACTOR-CRITIC NETWORK IN USE  
571 Model: "ActorNet"  
572 -----  
573 Layer (type)          Output Shape     Param #  Connected to  
574 ======-----  
575 input_1 (InputLayer) [(None, 5)]      0  
576 -----  
577 acc_1 (Dense)        (None, 128)       768      input_1[0][0]  
578 -----  
579 dir_1 (Dense)        (None, 128)       768      input_1[0][0]  
580 -----  
581 acc_2 (Dense)        (None, 128)       16512    acc_1[0][0]  
582 -----  
583 dir_2 (Dense)        (None, 128)       16512    dir_1[0][0]  
584 -----  
585 acc_3 (Dense)        (None, 128)       16512    acc_2[0][0]  
586 -----  
587 dir_3 (Dense)        (None, 128)       16512    dir_2[0][0]  
588 -----  
589 acc_out_mu (Dense)   (None, 1)         129      acc_3[0][0]  
590 -----  
591 dir_out_mu (Dense)   (None, 1)         129      dir_3[0][0]  
592 -----  
593 concatenate (Concatenate) (None, 2)       0        acc_out_mu[0][0]  
594                               dir_out_mu[0][0]  
595 -----  
596 Total params: 67,842  
597 Trainable params: 67,842  
598 Non-trainable params: 0  
599 -----  
600 Model: "CriticNet"  
601 -----  
602 Layer (type)          Output Shape     Param #  
603 ======-----  
604 input_2 (InputLayer) [(None, 5)]      0  
605 -----  
606 layer_1 (Dense)        (None, 128)       768  
607 -----  
608 layer_2 (Dense)        (None, 128)       16512  
609 -----  
610 layer_3 (Dense)        (None, 128)       16512  
611 -----  
612 dense (Dense)         (None, 1)         129  
613 -----  
614 Total params: 33,921  
615 Trainable params: 33,921  
616 Non-trainable params: 0  
617 -----  
618 2022-01-31 11:50:58.694406: 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  
619 completed  
620 completed  
621 completed  
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623 completed  
624 completed  
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639 completed  
640 completed  
641 test saved_model : mean steps : 164. mean rewards : 0.24991865456104279  
642 loading NN from: saved_best_model  
643 CURRENT ACTOR-CRITIC NETWORK IN USE  
644 Model: "ActorNet"  
645 -----  
646 Layer (type)          Output Shape     Param #  Connected to  
647 ======-----  
648 input_1 (InputLayer) [(None, 5)]      0  
649 -----  
650 acc_1 (Dense)        (None, 128)       768      input_1[0][0]  
651 -----  
652 dir_1 (Dense)        (None, 128)       768      input_1[0][0]  
653 -----
```

```

File - main
654 acc_2 (Dense)           (None, 128)      16512    acc_1[0][0]
655 -----
656 dir_2 (Dense)           (None, 128)      16512    dir_1[0][0]
657 -----
658 acc_3 (Dense)           (None, 128)      16512    acc_2[0][0]
659 -----
660 dir_3 (Dense)           (None, 128)      16512    dir_2[0][0]
661 -----
662 acc_out_mu (Dense)      (None, 1)        129      acc_3[0][0]
663 -----
664 dir_out_mu (Dense)      (None, 1)        129      dir_3[0][0]
665 -----
666 concatenate (Concatenate) (None, 2)        0        acc_out_mu[0][0]
667                               dir_out_mu[0][0]
668 =====
669 Total params: 67,842
670 Trainable params: 67,842
671 Non-trainable params: 0
672 -----
673 Model: "CriticNet"
674 -----
675 Layer (type)            Output Shape       Param #
676 -----
677 input_2 (InputLayer)     [(None, 5)]        0
678 -----
679 layer_1 (Dense)         (None, 128)       768
680 -----
681 layer_2 (Dense)         (None, 128)       16512
682 -----
683 layer_3 (Dense)         (None, 128)       16512
684 -----
685 dense (Dense)          (None, 1)        129
686 -----
687 Total params: 33,921
688 Trainable params: 33,921
689 Non-trainable params: 0
690 -----
691 2022-01-31 11:51:47.216706: 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
692 completed
693 completed
694 completed
695 completed
696 completed
697 completed
698 completed
699 completed
700 completed
701 completed
702 completed
703 completed
704 completed
705 completed
706 completed
707 completed
708 completed
709 completed
710 test saved_best_model : mean steps : 154. mean rewards : 0.010696849785745144
711
712 Process finished with exit code 0
713

```