|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Single Q-Learning | | | | | | | | |
| Combination | Mean | S.T.D | Median | I.Q.R | Max | Min | Failed | Difference |
| - | | | | | | | | |
| Original | 293.87 | 36.64 | 286.5 | 43.0 | 414 | 252 | 0 | 0 |
| Time | 255.87 | 26.25 | 247.0 | 20.0 | 325 | 228 | 0 | 18.32 |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |
| L | | | | | | | | |
| Original | 268.47 | 29.96 | 260.0 | 23.0 | 359 | 237 | 0 | 4.73 |
| Time | 243.80 | 15.12 | 242.5 | 15.0 | 287 | 224 | 0 | 32.76 |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |
| L + D | | | | | | | | |
| Original | 266.87 | 29.70 | 259.5 | 20.0 | 384 | 235 | 0 | 6.40 |
| Time | 238.93 | 14.74 | 236.0 | 10.0 | 284 | 220 | 0 | 37.69 |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |
| L + D + R | | | | | | | | |
| Original | 274.57 | 41.31 | 263.5 | 29.0 | 443 | 243 | 0 | 0 |
| Time | 239.60 | 15.89 | 236.5 | 15.0 | 308 | 222 | 0 | 36.83 |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |
| L + O + D + R | | | | | | | | |
| Original | - | - | - | - | - | - | - | - |
| Time | - | - | - | - | - | - | - | - |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Double Q-Learning | | | | | | | | |
| Combination | Mean | S.T.D | Median | I.Q.R | Max | Min | Failed | Difference |
| - | | | | | | | | |
| Original | 258.03 | 16.76 | 259.0 | 21.0 | 302 | 233 | 2 | 18.24 |
| Time | 262.73 | 43.64 | 250.0 | 29.0 | 438 | 233 | 3 | 6.25 |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |
| L | | | | | | | | |
| Original | 243.83 | 17.35 | 245.0 | 26.0 | 293 | 214 | 1 | 32.33 |
| Time | 248.10 | 29.86 | 240.5 | 22.0 | 332 | 212 | 0 | 25.12 |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |
| L + D | | | | | | | | |
| Original | 250.43 | 22.90 | 245.5 | 20.0 | 322 | 219 | 0 | 24.56 |
| Time | 239.40 | 37.74 | 231.5 | 15.0 | 425 | 211 | 1 | 31.49 |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |
| L + D + R | | | | | | | | |
| Original | 270.80 | 67.56 | 247.0 | 42.0 | 500 | 225 | 0 | 0 |
| Time | 235.53 | 16.78 | 233.0 | 22.0 | 284 | 210 | 1 | 40.73 |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |
| L + O + D + R | | | | | | | | |
| Original | - | - | - | - | - | - | - | - |
| Time | - | - | - | - | - | - | - | - |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Triple Q-Learning | | | | | | | | |
| Combination | Mean | S.T.D | Median | I.Q.R | Max | Min | Failed | Difference |
| - | | | | | | | | |
| Original | 286.97 | 67.94 | 262.0 | 68.0 | 496 | 226 | 3 | 0 |
| Time | 251.30 | 49.85 | 236.5 | 32.0 | 466 | 211 | 4 | 15.55 |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |
| R | | | | | | | | |
| Original | 263.93 | 37.28 | 251.5 | 37.0 | 414 | 227 | 2 | 7.11 |
| Time | 244.47 | 26.09 | 240.5 | 41.0 | 300 | 207 | 6 | 29.76 |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |
| L + D | | | | | | | | |
| Original | 245.97 | 39.84 | 234.0 | 22.0 | 417 | 213 | 1 | 24.26 |
| Time | 227.67 | 18.21 | 224.0 | 17.0 | 278 | 199 | 0 | 48.33 |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |
| L + D + R | | | | | | | | |
| Original | 236.90 | 17.40 | 234.5 | 17.0 | 291 | 216 | 1 | 39.25 |
| Time | 224.60 | 19.44 | 223.5 | 21.0 | 289 | 202 | 2 | 51.15 |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |
| L + O + D + R | | | | | | | | |
| Original | - | - | - | - | - | - | - | - |
| Time | - | - | - | - | - | - | - | - |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Quadruple Q-Learning | | | | | | | | |
| Combination | Mean | S.T.D | Median | I.Q.R | Max | Min | Failed | Difference |
| - | | | | | | | | |
| Original | 263.23 | 51.20 | 250.0 | 53.0 | 491 | 216 | 4 | 3.14 |
| Time |  |  |  |  |  |  |  |  |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |
| L | | | | | | | | |
| Original | 233.00 | 38.63 | 226.0 | 18.0 | 428 | 207 | 0 | 37.61 |
| Time |  |  |  |  |  |  |  |  |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |
| L + D | | | | | | | | |
| Original | 232.97 | 23.27 | 223.5 | 23.0 | 308 | 209 | 1 | 41.94 |
| Time |  |  |  |  |  |  |  |  |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |
| L + D + R | | | | | | | | |
| Original | 241.37 | 41.27 | 232.0 | 23.0 | 423 | 210 | 0 | 28.39 |
| Time |  |  |  |  |  |  |  |  |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |
| L + O + D + R | | | | | | | | |
| Original | - | - | - | - | - | - | - | - |
| Time |  |  |  |  |  |  |  |  |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Quintuple Q-Learning | | | | | | | | |
| Combination | Mean | S.T.D | Median | I.Q.R | Max | Min | Failed | Difference |
| - | | | | | | | | |
| Original | 251.47 | 34.26 | 243.5 | 40.0 | 343 | 213 | 4 | 20.49 |
| Time |  |  |  |  |  |  |  |  |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |
| L | | | | | | | | |
| Original | 222.37 | 10.50 | 221.5 | 12.0 | 261 | 208 | 0 | 54.85 |
| Time |  |  |  |  |  |  |  |  |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |
| L + D | | | | | | | | |
| Original | 228.77 | 19.21 | 225.5 | 18.0 | 285 | 202 | 1 | 47.03 |
| Time |  |  |  |  |  |  |  |  |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |
| L + D + R | | | | | | | | |
| Original | 222.67 | 10.28 | 223.0 | 14.0 | 250 | 206 | 0 | 54.58 |
| Time |  |  |  |  |  |  |  |  |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |
| L + O + D + R | | | | | | | | |
| Original | - | - | - | - | - | - | - | - |
| Time |  |  |  |  |  |  |  |  |
| Velocity |  |  |  |  |  |  |  |  |
| Height |  |  |  |  |  |  |  |  |