## **EnvParams**

#### Attributes render mode length width moves\_per\_timestep window height observation distance initial state initial state template distinguishable particles use speeds sigma average window allow\_wait social reward density invert speed observation speed observation threshold punish inhomogeneities speed gradient reward speed gradient linearity inh rew idx binary speeds choices Operations

# DQN

### \*layers Operations

Attributes

Operations

n()

rho()

render()

step(action)

reset()

close()

Attributes

init (n observations, n actions, new model): forward(x):

GridEnv

\*env params: EnvParams

window: pygame.display

\_\_init\_\_(EnvParams)

### Trainer

#### Attributes

Attributes

model

Operations

criterion: SmoothL1Loss policy net: DQN target net: DQN

memory: TensorDictReplayBuffer

init (model id)

Playground

optimizer: AdamW

state: Tensor

env params: EnvParams env: GridEnv

BATCH SIZE

**GAMMA** 

**EPS START EPS END** 

**EPS DECAY** TAU

LR

MEMORY SIZE

Operations

## init (env params, hyperparams, total steps, ...)

load(model id) reset\_env() run() train and save()