
evaluateHistory.m

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Summary: Evaluate the performance of the policies in a certain learning history.

Input arguments: whichMDP: number of the MDP to test policies on history: cell array, each cell contains a policy to be evaluated

Output arguments: res: matrix with the average and std of steps survived by each policy

High-level steps

1. Set up configuration for helicopter scenario (paths, variables, etc)
2. Compile java trainer to run desired MDP
3. Evaluate each policy in history file \verb@sample@ times and return statistics

Code

```
function res=evaluateHistory(whichMDP, history)

    % 1. Set up helicopter configuration
    settings_hc;

    n_iter = numel(history);
    res = zeros([n_iter, 5]);

    % 2. Compile java trainer
    setenv('tMDP', num2str(whichMDP));
    cd([trainerDir 'consoleTrainerJavaHelicopter']);
    !sed "s/whichTrainingMDP = [0-9]/whichTrainingMDP = ${tMDP}/" <src/consoleTrai
    !make

    % 3. Loop over history and evaluate policies
    for j=1:n_iter
        theAgent = helicopter_agent(history{j}.policy, codecDir, pilcoDir);
        res(j, 1) = size(history{j}.dynmodel.targets, 1);
        [res(j, 2), res(j, 3), res(j, 4), res(j, 5)] = evaluatePolicy(theAgent, tr
    end

end

function [mean_time, std_time, mean_reward, std_reward]=evaluatePolicy(theAgent, t
% Auxiliar function for evaluateHistory.
```

```

if nargin < 4
    sample = 10; % Number of trajectories to generate
else
    sample = nb_samples;
end
steps = zeros([sample, 1]);
rewards = zeros([sample, 1]);

for j=1:sample
    cd([trainerDir 'consoleTrainerJavaHelicopter']);
    !bash run.bash &
    cd([pilcoDir 'scenarios/helicopter']);
    runAgent(theAgent);
    newdata = load('GPHistory.mat');
    steps(j) = size(newdata.helicopter_agent_struct, 1) - 1;
    rewards(j) = mean(newdata.helicopter_agent_struct(:, 17));
end

mean_time = mean(steps);
std_time = std(steps);
mean_reward = mean(rewards);
std_reward = std(rewards);

end

```

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