Safety Gym - PointGoal1

Project: RL Safety
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So far, I've written the @simple-PointGoal1 constraint and I've got it in progress running on luigi (check the luigi tracker).

@simple-PointGoal1 constraint:

Translation function:

1. Read the velocimeter and calculate the angle of the heading
2. Read the hazards_lidar and calculate which bucket the heading angle falls into
3. Return the value in the lidar bucket discretized into bins of 0.2 (after subtracting 0.1)

The constraint then has 5 states, and is fully connected. Taking a token in [0,4] will transition the DFA to that state. A violation occurs at

Experiments

Currently, I have the following hyperparameters running on git commit :

- Constraint: simple-PointGoal1
- Augmentation: None, Constraint state (one-hot, no embed, though this isn't part of the name)
- Reward shaping: 0, -0.001, -0.025, -0.05, -0.01 (mirroring Atari experiments)
- Train seeds 1206, 7842, 8601

At the time of writing, I have 11 of 30 training runs completed. As each batch of 6 takes 4-5 hours, if I don't have any more computer crashes I expect to have the lot done in ROUND_UP((30-11) / 6) * 5 = 20 hours (tomorrow morning). If it does crash, I'm going to lower the number of workers to 5 and hope that's more stable because I assume the problem is CPU overheating.

Results

So far, I've done some plotting of the training curves that have finished so far... TODO: KEEP WRITING THIS