Your Task

We used this policy to play the game and collected some data. You need to explain why the agent took a specific action when the input variables took specific values.

The action taken by the agent is up.

The value of y_ball_1 is 0.9018810391426086

The gradient of the log-likelihood for action up with respect to y_ball_1 is 2.75e-04.

The value of x ball 1 is 0.5703107714653015

The gradient of the log-likelihood for action up with respect to x_ball_1 is -4.13e-04.

The value of y ball 2 is 0.5564423203468323

The gradient of the log-likelihood for action up with respect to y_ball_2 is -4.36e-04.

The value of x ball 2 is 0.6364298462867737

The gradient of the log-likelihood for action up with respect to x_ball_2 is -7.43e-06.

The value of y_ball_3 is 0.4664875864982605

The gradient of the log-likelihood for action up with respect to y_ball_3 is -8.24e-04.

The value of x_ball_3 is 0.7508251070976257

The gradient of the log-likelihood for action up with respect to x_ball_3 is 3.87e-04.

The value of y_ball_4 is 0.7325012683868408

The gradient of the log-likelihood for action up with respect to y_ball_4 is 7.06e-04.

The value of x_ball_4 is 1.0

The gradient of the log-likelihood for action up with respect to x_ball_4 is 1.34e-03.

The value of y opponent 1 is 1.0

The gradient of the log-likelihood for action up with respect to y_opponent_1 is 2.09e-02.

The value of y_opponent_2 is 1.0

The gradient of the log-likelihood for action up with respect to y_opponent_2 is 1.67e-02.

The value of y_opponent_3 is 1.0

The gradient of the log-likelihood for action up with respect to y_opponent_3 is -2.63e-03.

The value of y_opponent_4 is 1.0

The gradient of the log-likelihood for action up with respect to y_opponent_4 is -8.92e-04.

The value of y_agent_1 is 1.0

The gradient of the log-likelihood for action up with respect to y agent 1 is -1.39e-02.

The value of y_agent_2 is 1.0

The gradient of the log-likelihood for action up with respect to y_agent_2 is 4.85e-03.

The value of y_agent_3 is 1.0

The gradient of the log-likelihood for action up with respect to y_agent_3 is 4.58e-02.

The value of y_agent_4 is 0.0

The gradient of the log-likelihood for action up with respect to y_agent_4 is -4.94e-02.

Output

You need to provide a concise explanation for why the agent took this action when the input variables took these values.

For example, would the agent earn a point by choosing such an action?

There are a few rules that need to be followed.

- 1. Your explanations should be specific. You should explain why the action up is preferred over other actions.
- 2. Your explanations should be easy to read.
- 3. Your explanations should be entirely based on the equations for the policy, the values of input variables, and the gradients of action log-likelihood with respect to input variables.
- 4. Your explanations should be consistent with the definition of the input variables and the coordinate system.

Render the equations into latex format. Use the object names and frame indices as subscripts. For example, y_\text{agent,1}. Use the name of actions as the subscript of logits. For example, logits_\text{noop}. Only keep two significant digits for each number.