# Efficiently Guiding Imitation Learning Agents with Human Gaze

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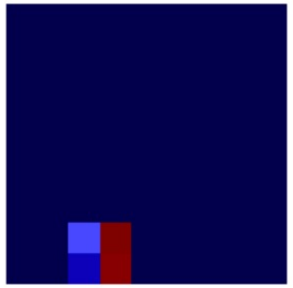
- **Motivation:** Can we leverage human gaze information accompanying human demonstrations for imitation learning in a computationally efficient manner? What if we have gaze information available only at train time?

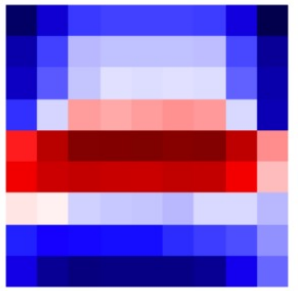
- **Approach:** We introduce an auxiliary loss function called "Coverage based Gaze Loss" or CGL which encourages an imitation learning agent to pay attention to areas of the state space which the human considers important (as indicated by their gaze data).

- **Results:** Average performance gains up to 390% observed across 20 Atari Games for 3 different Imitation Learning methods.

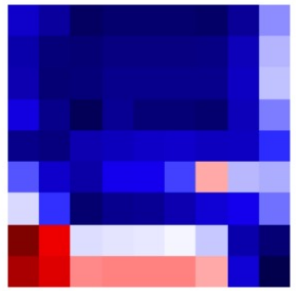
Game State (Breakout)



Human Gaze



Agent attention **not guided** by Human Gaze



Agent attention **guided** by Human Gaze