Beating Atari with Natural Language guided Reinforcement Learning
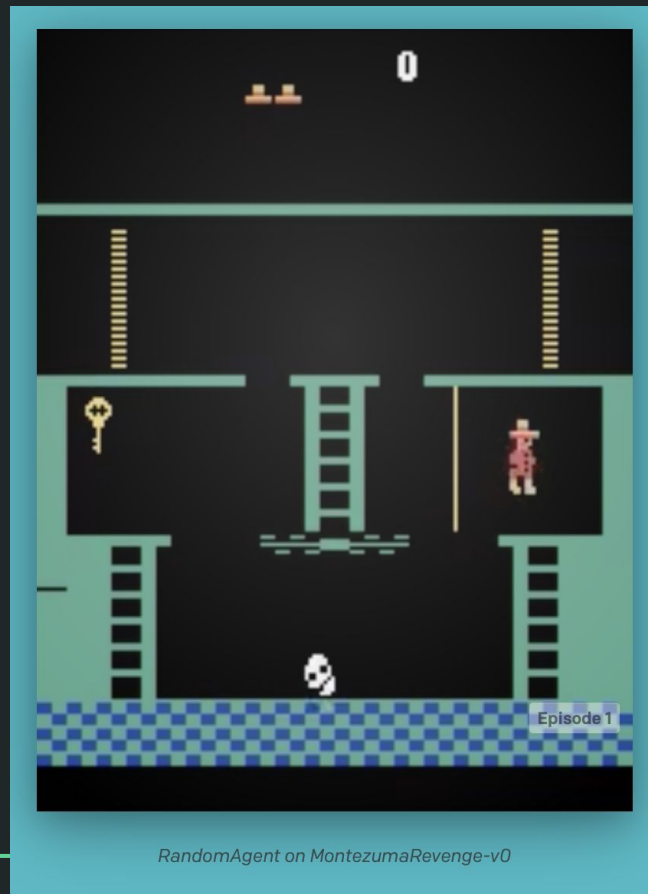
Montezuma Revenge
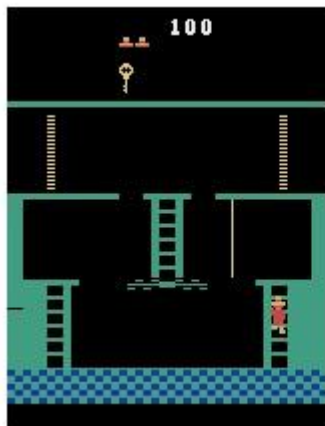

Instructions to RL Agent

1: "Climb down the ladder"

2: "Jump to the rope"

3: "Go to the right side of the room"

4: "Climb down the ladder"

5: "Go to the left side of the room"
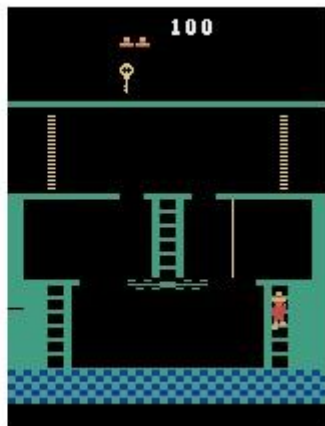
6: "Climb up the ladder"

7: "Get the key"

RandomAgent on MontezumaRevenge-v0

Implementation Details

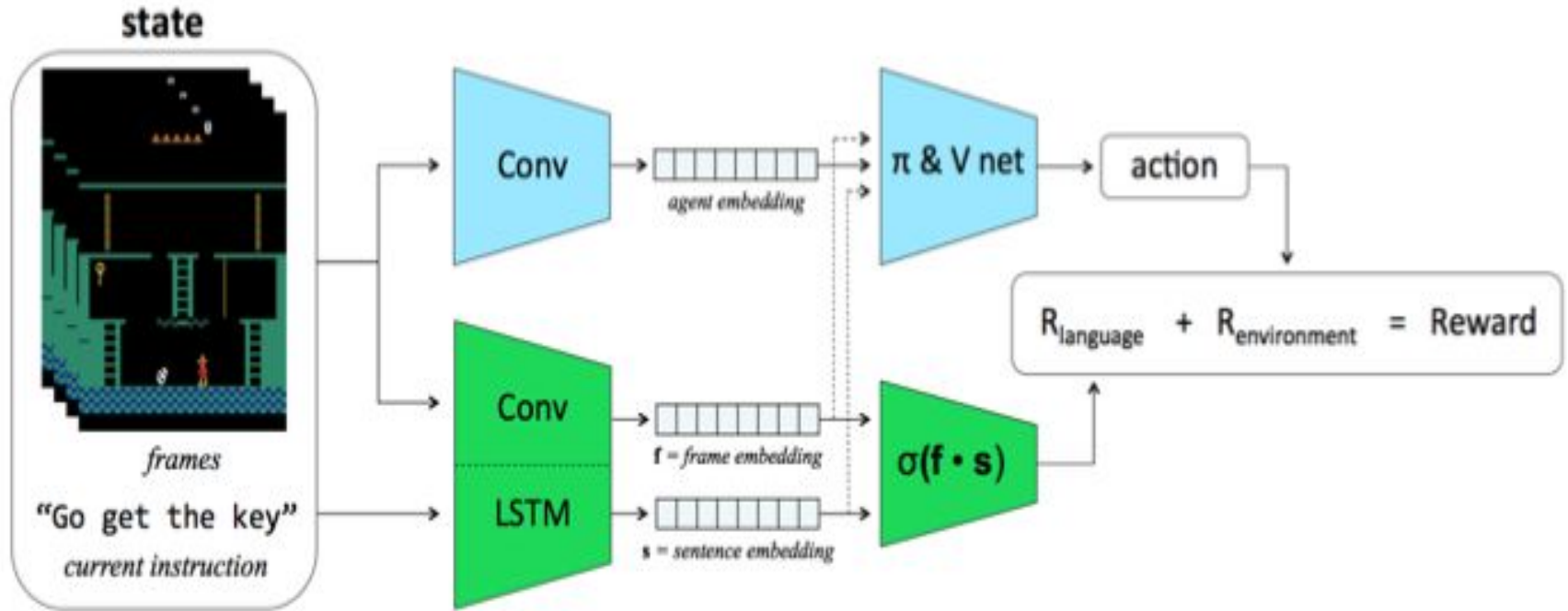# Dataset Generation

Climb up the rope

Jump to the rope

Model Architecture
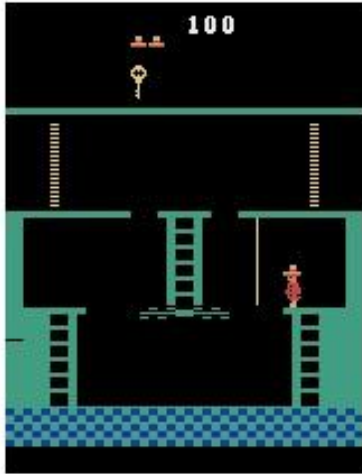
Bimodal Embeddings

- Climb up the ladder = 0.9527

Bimodal Embeddings

- Jump to the rope = 0.8666
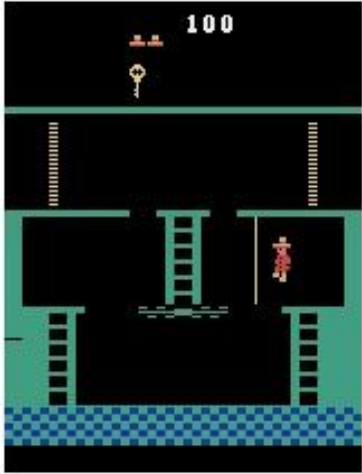
Bimodal Embeddings

- Use the key   =   0.8219
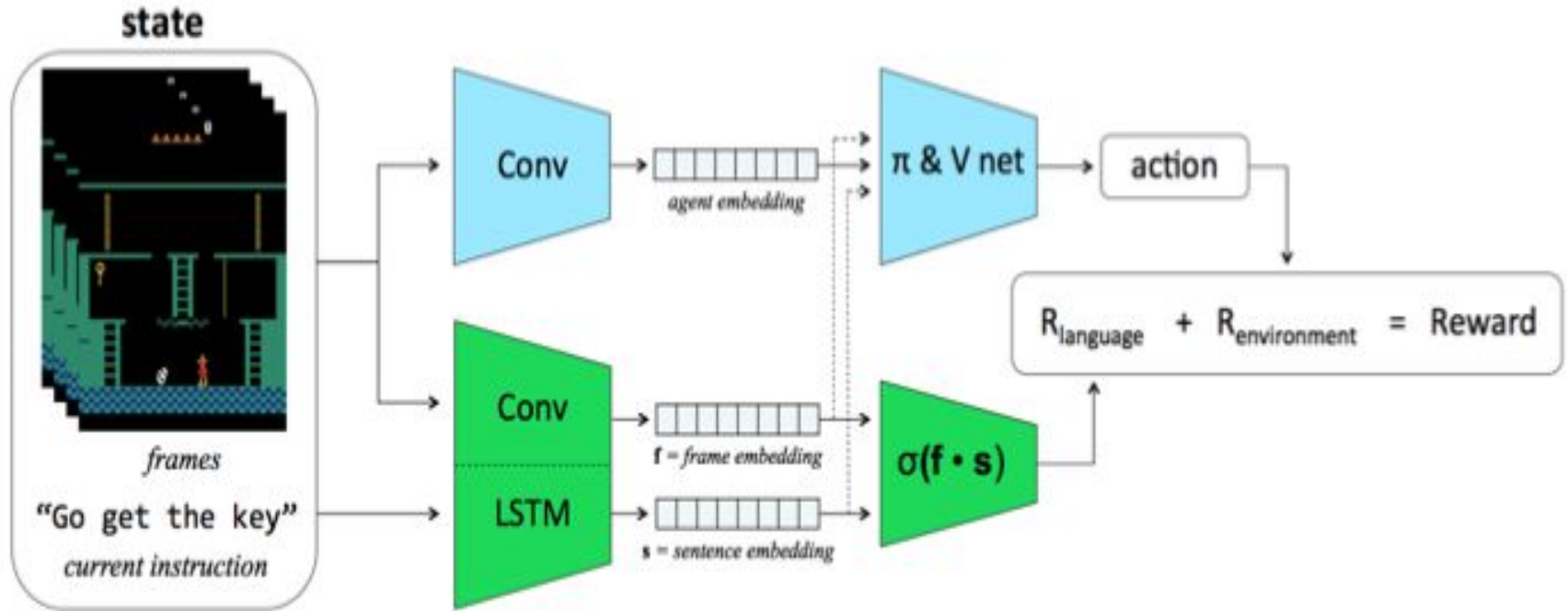
Bimodal Embeddings
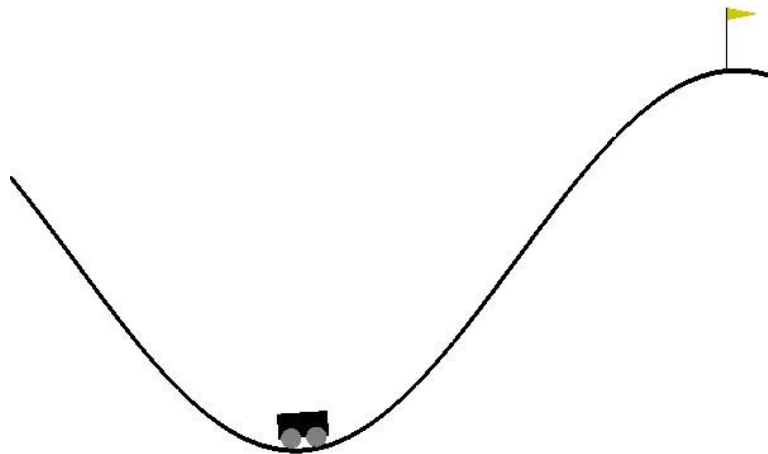

- Climb up the ladder = -0.2920

Bimodal Embeddings

- Go to the center of the room $=$ 0.3710
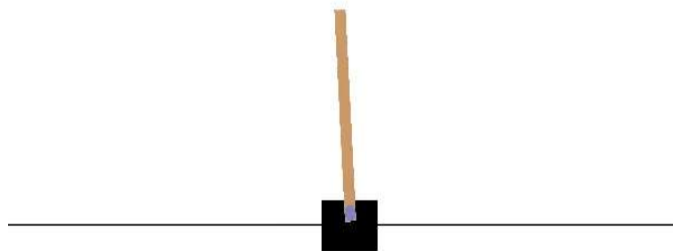
Model Architecture
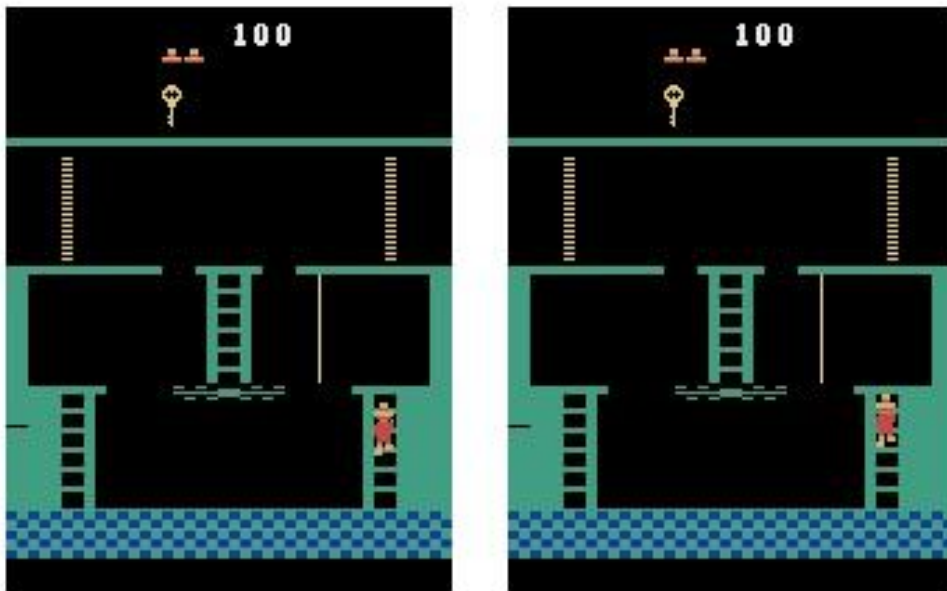
Simpler Games

MountainCar

CartPole

Problems Faced

● Action from pair of frames

Problems Faced

- Processing of sequence of instructions

  1. climb down the ladder
  2. jump to the rope
  3. go to the right side of the room
  4. climb down the ladder
  5. go to the bottom of the room
  6. go to the center of the room
  7. go to the left side of the room
  8. climb up the ladder
  9. get the key

RandomAgent on MontezumaRevenge-v0