Discovering and Achieving Goals via World Models
Russell Mendonca\textsuperscript{1}*, Oleh Rybkin\textsuperscript{2}*, Kostas Daniilidis\textsuperscript{2}, Danijar Hafner\textsuperscript{3}, Deepak Pathak\textsuperscript{1}
* equal contribution  \textsuperscript{1}Carnegie Mellon University  \textsuperscript{2}University of Pennsylvania  \textsuperscript{3}University of Toronto

1 Introducing LEXA

- Learns a world model without any supervision, trains two policies (explorer and achiever) in imagination.
- The explorer finds new images via model disagreement and the achiever learns to reliably reach them.
- Once trained, the achiever reaches user-specified goals zero-shot without further training at test time.

2 Unsupervised Discovery

- Describes world model, explorer, achiever

3 Goal Image Benchmark

4 Diverse Exploration

- Images discovered by the explorer policy on the kitchen environment

5 Evaluation on Manipulation Envs

- Kitchen evaluation
- RoboBin evaluation

6 Evaluation on Pose Matching Envs

- Walker evaluation
- Quadruped evaluation

Website with videos: https://orybkin.github.io/lexa/