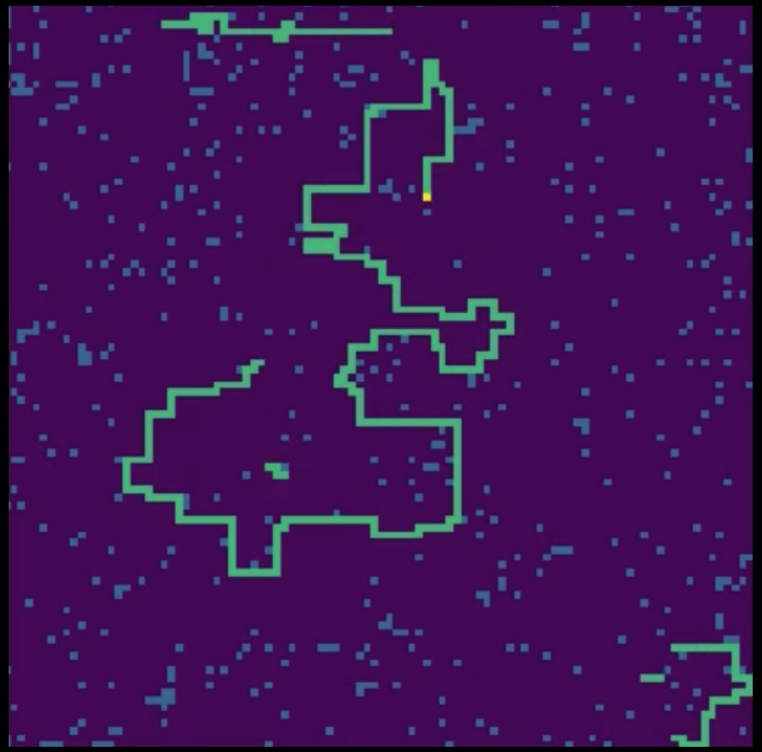
Deep Reinforcement Learning

Optimizations

- **Starting DQN:**
  - In: (2 * 8 + 1)x (2 * 8 + 1); Layers: 64x64; Out: 4 (for all directions)
- **Optimizations:**
  - framestacking, input normalization
  - scheduled learning rate, dynamic exploration rate
  - manual direction feature extraction, increased network size
- **Result: 356% improvement to start**

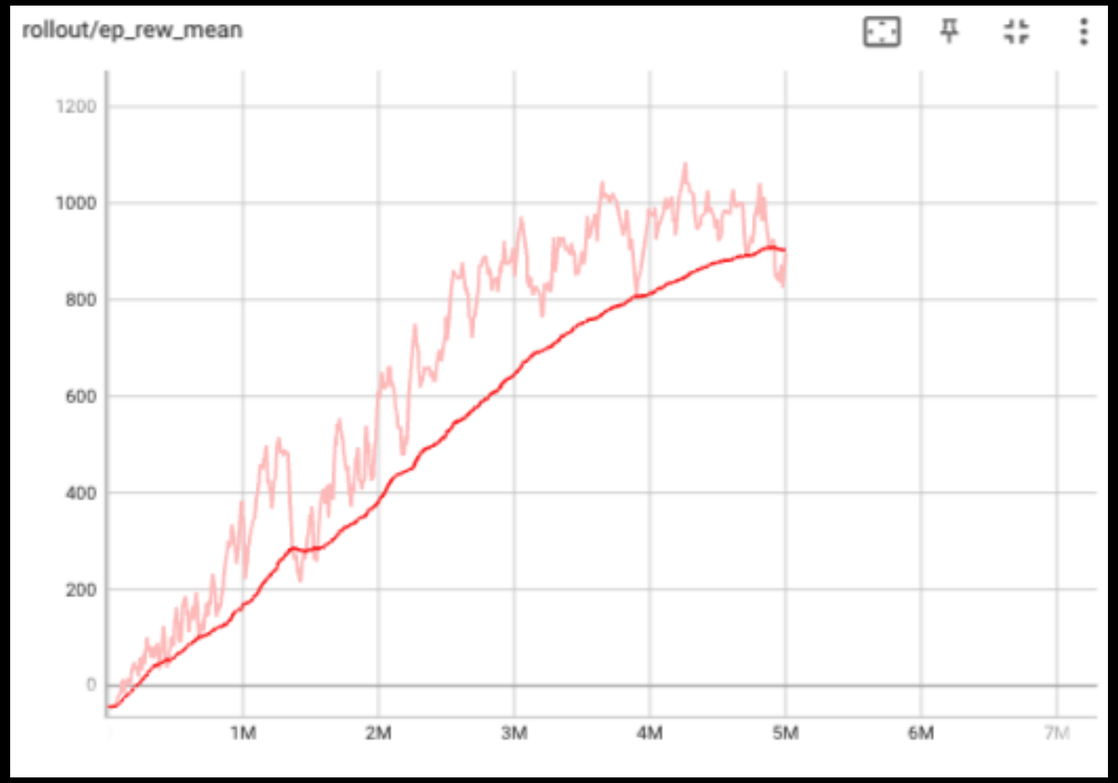


Optimized AI playing against previous versions of itself in a training environment

Result

Training the optimized AI

- **Final optimized agent:**
  - Trained for 5 million steps (moves) for 4.5 hours
- **Positives:** Ability to play game with a good level
- **Negatives:** No long term strategy, sometimes get stuck in local minimas



Training stats of the final optimized agent