Deep Reinforcement Learning

This project

- **Model Free:**
  - A multiplayer game with limited view of the field implies unknown transition probabilities
  - Explored: DQN, A2C, PPO
  - **Will focus on DQN - the best model found (within the scope of this project)**

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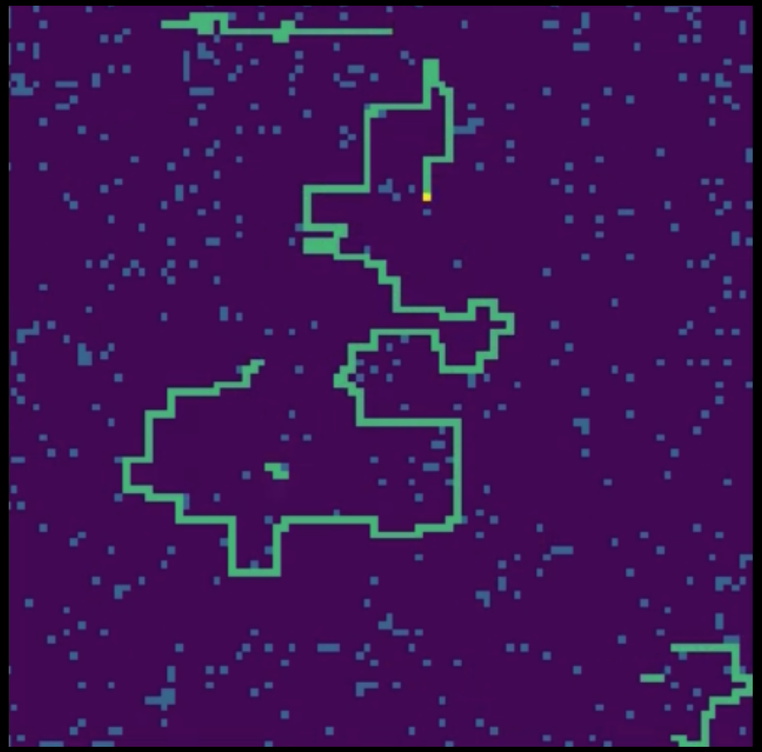
Optimizations

- **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