Project Malmo

A platform for AI experimentation, built on Minecraft

https://www.microsoft.com/en-us/research/project/project-malmo/

Open source on Github
https://github.com/Microsoft/malmo
Aim: a stepping stone to real-world applications

Artificial intelligence

Why AI researchers like video games

Games help them understand reality
Aim: a stepping stone to real-world applications

A rich world with coherent physics
Aim: a stepping stone to real-world applications

Support a wide range of ideas, approaches and techniques
Aim: a stepping stone to real-world applications

A game-world ready for collaboration

Received mission: Name the first item you see.

<Chatty> flower
The Malmo Collaborative AI Challenge

Goal: foster research in collaborative AI

April/May 2017: graduate students world-wide participated
Prizes: AI Summer School & Azure for Research grants
Focus: coordination games (with signalling)

Example payoff matrix for the stag hunt game
[Rousseau, classic game theory]

<table>
<thead>
<tr>
<th></th>
<th>Stag</th>
<th>Hare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stag</td>
<td>5, 5</td>
<td>0, 1</td>
</tr>
<tr>
<td>Hare</td>
<td>1, 0</td>
<td>1, 1</td>
</tr>
</tbody>
</table>

Extended stag hunt with signalling
Challenge Task: Pig Chase

Goal: develop / train an AI agent that adapts to opponent strategy

Screenshot: Human-Agent pig chase game
Challenge Task: Pig Chase

Goal: develop / train an AI agent that adapts to opponent strategy

Up next: presentations by the winning teams

Screenshot: Human-Agent pig chase game
The Future of Collaborative AI