Emergent Behaviour

Vince Knight

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\[
\begin{pmatrix}
(3, 3) & (0, 5) \\
(5, 0) & (1, 1)
\end{pmatrix}
\]
Strategy population dynamics based on average payoffs

- Cooperator
- Tit For Tat
- Random: 0.5
- Alternator
- Defector

Turn

Relative population size

10^0 10^1 10^2
\[ \text{argmin}_t (\text{PoA}(x)) \]
Investigating Social Networks with Agent Based Simulation and Link Prediction Methods

Angelico Fetta
<table>
<thead>
<tr>
<th>Pair</th>
<th>Adamic Adar</th>
<th>Preferentiel Attachment</th>
<th>Resource Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1, 3)</td>
<td>1.632</td>
<td>0.583</td>
<td>6</td>
</tr>
<tr>
<td>(1, 4)</td>
<td>1.721</td>
<td>0.250</td>
<td>8</td>
</tr>
</tbody>
</table>
Python Tools

- Game Theoretic analysis: Gambit, Sagemath, Axelrod
- Network Analysis: Networkx