Building Game Theoretical Software in a Research Environment

An Exploration of Complexity

James Campbell & Dr Vince(nt) Knight

Department of Mathematics

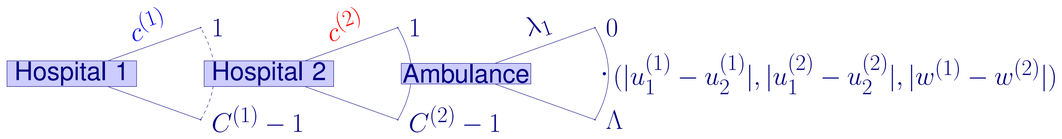

Figure 1: Underlying Stackelberg Game

Stackelberg game, MC, NFG

The issue of waiting times for ambulances at at two hospitals can be modelled as a simple Stackelberg game where each hospital has its own AE and Ward. Patients arrive at the AE at rate λ and if there is space in the queue they join it. If there is no space in the queue that patient is lost. Each patient has an AE service time, μ, which represents how long their treatment in AE will last. A proportion, p, of patients are then dismissed immediately. Those who are not dismissed are admitted to the ward if there is space, otherwise they will wait in AE, continuing to occupy a bed. Once admitted, they are treated in the ward with a service time $\hat{\mu}$ and then dismissed without delay.

Sage OSS, Matching/Co-operative games

1. Lorem ipsum dolor sit amet, consectetur.
2. Nullam at mi nisl. Vestibulum est purus, ultricies cursus volutpat sit amet, vestibulum eu.
3. Praesent tortor libero, vulputate quis elementum a, iaculis.
4. Phasellus a quam mauris, non varius mauris. Fusce tristique, enim tempor varius porta, elit purus commodo velit, pretium mattis ligula nisl nec ante.
5. Ut adipiscing accumsan sapien, sit amet pretium.
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7. Nullam at mi nisl. Vestibulum est purus, ultricies cursus volutpat sit amet, vestibulum eu.
8. Praesent tortor libero, vulputate quis elementum a, iaculis.

Limitations of MC

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Q-Learning

Nulla vel nisl sed mauris auctor mollis non sed.

$$E = mc^2 \tag{1}$$

Curabitur mi sem, pulvinar quis aliquam rutrum. (1) edf (2) , $\Omega = [-1, 1]^3$, maecenas leo est, ornare at. $z = -1$ edf $z = 1$ sed interdum felis dapibus sem. x set y ytruem. Turpis j amet accumsan enim y-lacina; ref k-viverra nec porttitor x-lacina.

Vestibulum ac diam a odio tempus congue. Vivamus id enim nisi:

$$\begin{aligned}\cos\bar{\phi}_k Q_{j,k+1,t} + Q_{j,k+1,x} + \frac{\sin^2\bar{\phi}_k}{T\cos\bar{\phi}_k} Q_{j,k+1} = \\ -\cos\phi_k Q_{j,k,t} + Q_{j,k,x} - \frac{\sin^2\phi_k}{T\cos\phi_k} Q_{j,k}\end{aligned} \tag{2}$$

and

$$\begin{aligned}\cos\bar{\phi}_j Q_{j+1,k,t} + Q_{j+1,k,y} + \frac{\sin^2\bar{\phi}_j}{T\cos\bar{\phi}_j} Q_{j+1,k} = \\ -\cos\phi_j Q_{j,k,t} + Q_{j,k,y} - \frac{\sin^2\phi_j}{T\cos\phi_j} Q_{j,k}.\end{aligned} \tag{3}$$

Nulla sed arcu arcu. Duis et ante gravida orci venenatis tincidunt. Fusce vitae lacinia metus. Pellentesque habitant morbi. $\mathbf{A}\underline{\xi} = \underline{\beta}$ Vim $\underline{\xi}$ enum nidi $3(P+2)^2$ lacina. Id feugain $\mathbf{A}$ nun quis; magno. Fusce convallis rutrum turpis, quis aliquet enim accumsan id. Vestibulum ullamcorper porttitor convallis. Integer sagittis interdum malesuada. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos himenaeos. Sed adipiscing tristique orci at ullamcorper. Morbi accumsan, urna et porttitor pulvinar, lacus risus dignissim massa. Proin sollicitudin. Pellentesque eget orci eros. Fusce ultricies, tellus et pellentesque fringilla, ante massa luctus libero, quis tristique purus urna nec nibh.

Results

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Treatments	Response 1	Response 2
Treatment 1	0.0003262	0.562
Treatment 2	0.0015681	0.910
Treatment 3	0.0009271	0.296

Table 1: Table caption