The Ambulance Decision Game

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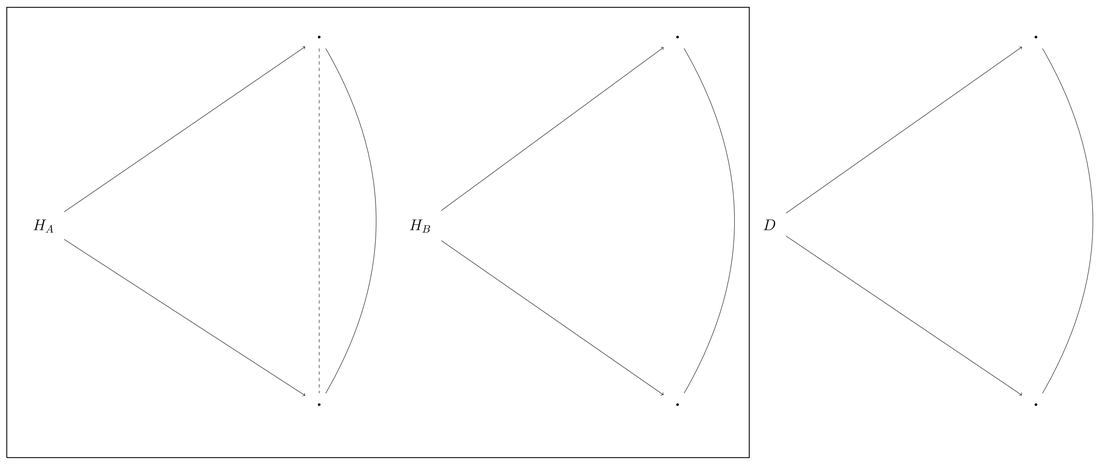
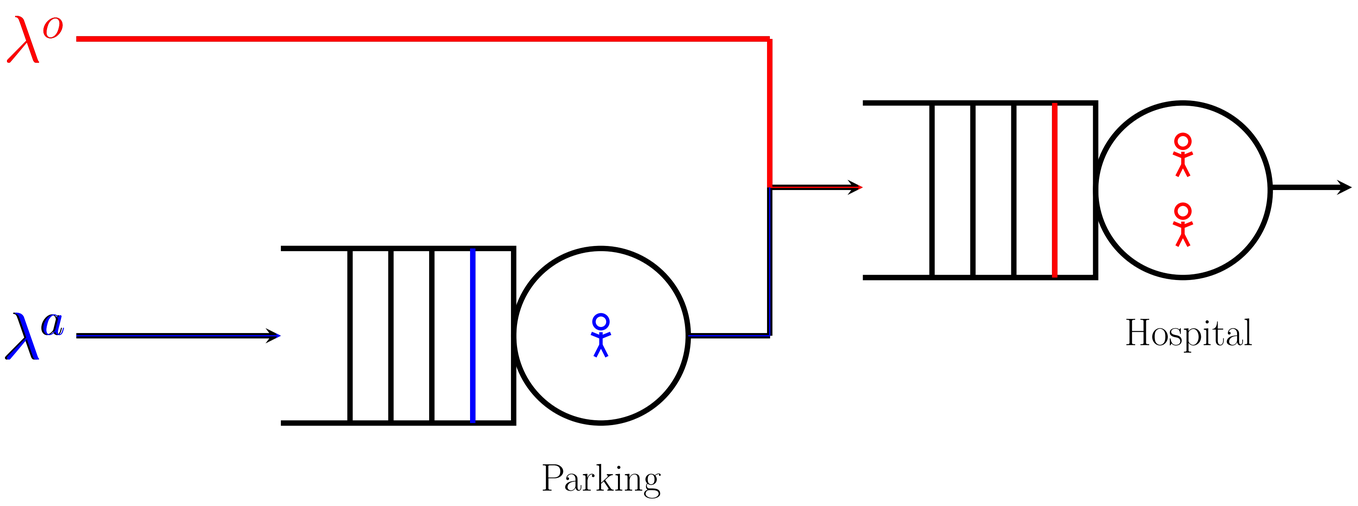
Ambulance Blockage

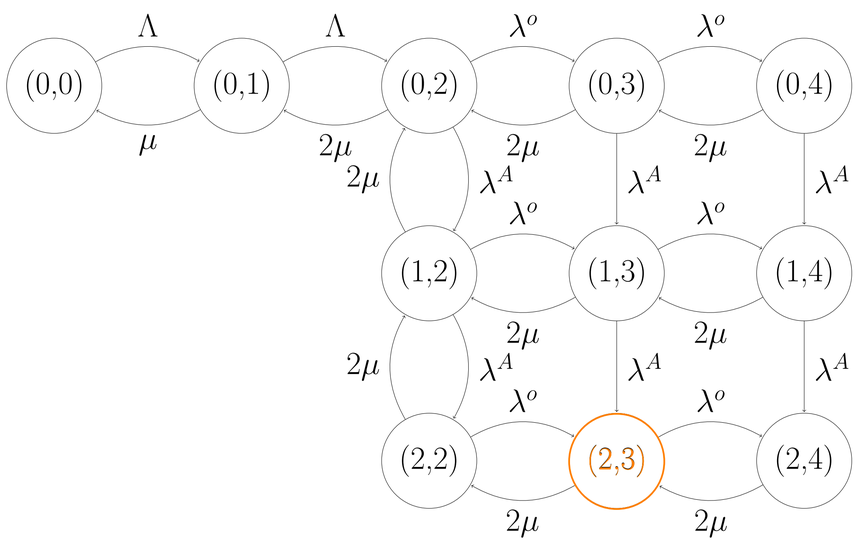
Imperfect information game



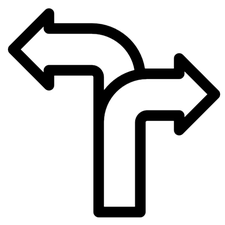
Diagrammatic representation of a queue

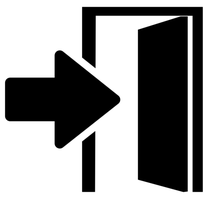


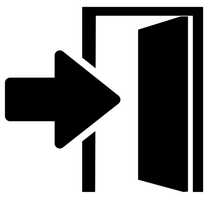
Markov Chain model



Players and strategies







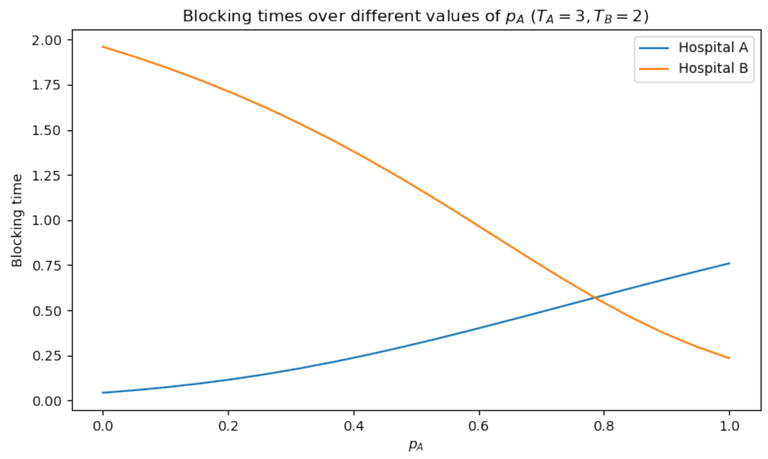
$p_A, p_B \in [0, 1]$
$p_A + p_B = 1$

$T_A \in [1, N_A]$

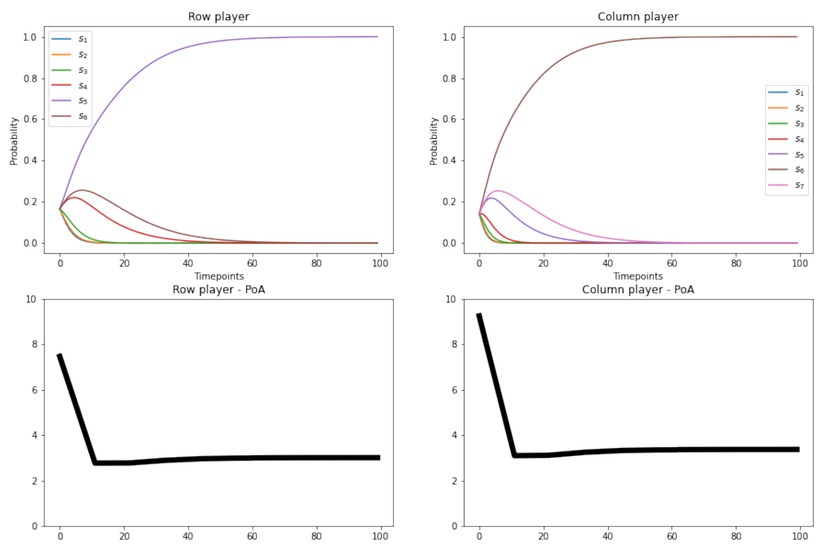
$T_B \in [1, N_B]$

Ambulance's decision

$$\begin{matrix} T_A = 3 \\ T_B = 2 \end{matrix} \rightarrow \begin{pmatrix} - & - & - & - \\ - & - & - & - \\ - & \text{x} & - & - \\ - & - & - & - \end{pmatrix} \rightarrow B_A(p_A) = B_B(1 - p_A)$$



Learning algorithm



Inefficiencies can be learned and emerge naturally

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Targeted incentivisation of behaviours can help escape inefficiencies

Learning algorithm with incentives