

**SCHOOL OF SCIENCE AND ENGINEERING**

**PROJECT 3: BUST THE GHOST**

**ARTIFICIAL INTELLIGENCE**

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**Youtube Demonstration:** [**https://youtu.be/qr12AW3IDh4**](https://youtu.be/qr12AW3IDh4)

In this assignment I used Unity to implement/reproduce "Bust the Ghost" game. I created a 8x 20 grid. The ghost was placed in one of the cells according to a prior distribution of Ghost over location P(Ghost). I used a uniform distribution to start with. when clicking a cell, the user/player gets a color red/green/orange/yellow depending on how the far is the ghost is from the clicked cell. On the ghost: red 1 or 2 cells away: orange 3 or 4 cells away: yellow 5+ cells away: green. I defined and used a conditional probability distribution P(Color/Distance from Ghost). I used this probability to decide on the color to display. After each click "t" the Posterior Probability of the Ghost P(Ghost/ Color) is updated and displayed on the cells using Bayesian inference P(Ghost\_t)=P(Ghost/Color\_t)=P(Ghost\_t-1)\*P(Color/Distance from Ghost). P(Ghost\_0)= P(Ghost/Color\_0)= P(Ghost) the prior probability. Normalization was done. User can decide to "bust" a cell if ghost is in the cell; the player wins otherwise he/she looses.

**Screenshots:**

