

Luke Parnis AI Task 2 –Guard game AI

Can your AI assist or entertain while assisting thinks of its simplest purpose.

The AI I want to create is for entertainment purposes because its AI for a video game. I want to create a for a video game that tries to catch the player when he does something wrong and does nothing when the player is doing something good because it's for a game so it's an AI for entertainment. So basically it's a guarding AI.

I got this idea from the AI police of GTAV which is a video game. Here is a description of the AI of the police I got from the GTAV website:

"The police work upon a Wanted Level system against the player. If the player is noticed performing a crime, he may gain a Wanted Star (increasing his wanted level). More serious crimes will grant a higher wanted level. Police responses vary depending on the wanted level, ranging from foot chases to calling in the helicopter, the FBI (FIB in the HD Universe) or even the armed forces (NOOSE in HD Universe) Relevant offenses include crashing into a police car, shooting pedestrians, having sex with prostitutes in GTA San Andreas, stealing vehicles, entering prohibited areas or occasionally unavoidable participation in certain missions (ex. bank heists). The police will not arrest you for trespassing on private property, traffic offenses (ex. speeding, running red lights)" (GtaV Wikia, 2016).

This AI will entertain the player by giving him a challenge by using a much simpler version of the police AI of GTAV. This AI will be there to catch or kill the player when he goes somewhere he can't go or does something he can't do.

What are the requirements' to design your AI and what maybe the limitations? Think of its simplest versions as well.

Things I am going to need to create this AI are:

- **The code engine:** Since this is an AI of a video game I would create I would use unity which is a program that is used to create video games and I would create this by using the C #language that can be used in Unity.
- **Design and some type of visuals:** Since this AI is in game I would need to create depending on what type of graphics, settings and created either with 3D models or 2D sprites depending on what I chose.
- **Logic of the AI :** An algorithm of how the AI will work meaning will it interact with the player ,where the AI can go and how will it move.

- **Testers:** Were going to need people to test out the game so we can see how the game will work and also see how the AI will interact and to check for bugs, crashers and sort of problem that comes when creating an AI with code.
- **The finite system model :** I will use the Finite state system to create my AI because it has all the movement and working pattern and change it a little bit to fit for my AI but it already fits the taught process and how the AI should work. I chose this system because “FSMs are commonly used to organize and represent an execution flow, which is useful to implement AI in games. The "brain" of an enemy, for instance, can be implemented using a FSM: every state represents an action, such as attack or evade:” (Bevilacqua, 2013).

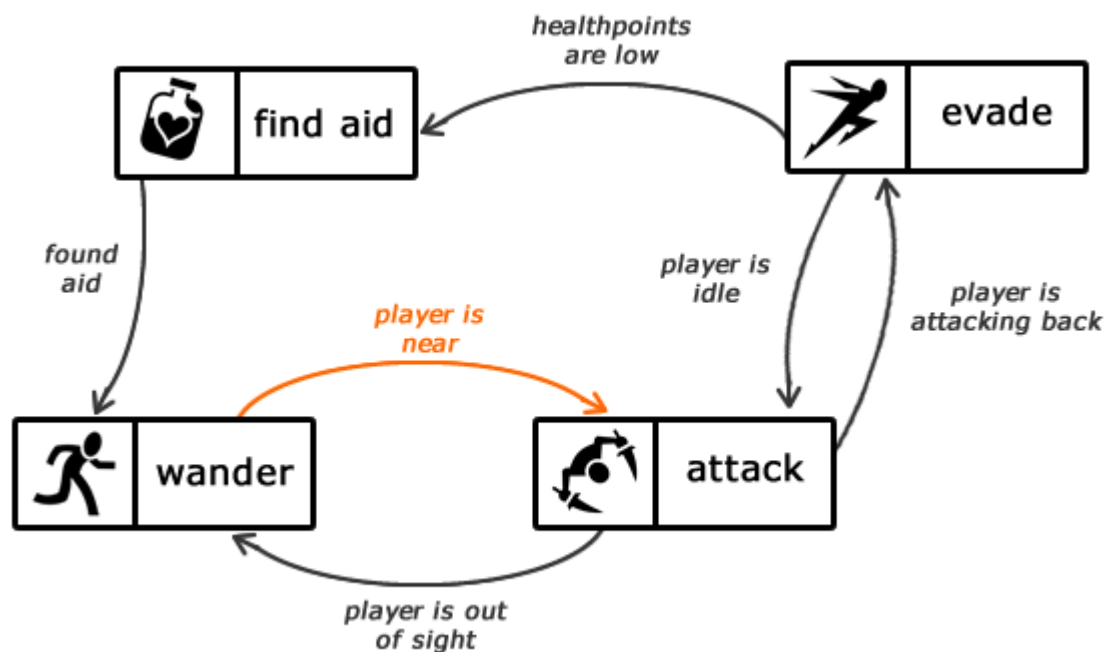


Figure 1: FSM representing the brain of an enemy. (Bevilacqua, 2013)

The limitations of creating this AI will be:

- **Time:** I am going to need a lot of time not only to create this AI but to test also .
- **Testers :** Finding testers will be hard because I am going to use more time and I need to find people of many types for example gamers and non-gamers.
- **Knowledge of the code:** Since creating an AI is not a simple thing it's going to require hard code and very in-depth skill of coding which is something I am still an amateur at and don't have much practice.

How would you approach to creation of your AI? Think of different ways you could develop it, and ways to test it?

This is how I would create and develop the AI:

- First I would sketch how the AI will function and work.
- Then I would create the models for it either 3D or 2D
- Before I code I would create a set of boundaries and with a set of rules which will work according to how the AI will work in the game ,for example if the player hits the AI the AI kills the player and goes back to his spawn.
- Then I would start coding the game and make it all until I add the AI code.
- When I add the AI in the game first I would use the model the start coding its functions and how should it work

After I create the AI I would start testing:

- First I would start testing myself the AI and look out for bugs and errors.
- Then after I have a more functioning build of the game I would try out on other people to see if they can break the game and see how it works with them. When testing with different I would try to find different people like
 - Gamers to see how they handle and see if they beat there AI with their gaming knowledge.
 - Kids to see how advance this AI is in compered to children.
 - People who don't play games to see how they handle it.