Dominic Drury

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CS-370

1-3 Assignment: Short Paper

I have been an avid gamer for most of my life, and one major problem that I have in my life, first world as it may be, is that computer enemies in games are horrible to play against. I am a husband and a father of two little ones, so I cannot really play games against people since I need to be able to pause my game at any time. This leads me to rely on computer enemies, but these enemies suffer from pathfinding issues, predictable patterns, and increasing the difficulty of pretty much any game only serves to make the enemies have more health and do more damage. I want the difficulty to make the enemies smarter, not just tougher.

Using machine learning, multiple models could be built based either off the number of iterations allowed by model for each, or the skill level of the play data the model is allowed to use. This could train the AI to improve its pathfinding, skill and item usage in game, and increase the challenge without it being a game of creating a build that has unlimited resources and range. (I am thinking of Skyrim here and how the difficulty is either a cakewalk or you have to use a ranged stealth bow build to do enough damage without getting hit since every enemy can kill you in a single swing)

Some things that would be necessary for this would be a plethora of play data from a range of skill levels, a model, or models, that could transform that data into a functional set of rules, and since the “meta” of games tend to evolve as the game is played, these models too would need to be able to evolve.

One of the major ethical issues is the same one that is faced by many current models in the creative sector, which is that the data the models will need to be built off of will likely be real people, and since gathering enough data from play testers alone would be improbable, it would likely need to come from players that might not expressly consent to their data being tracked and used. What I mean by this is that even if it is listed in the terms and service, many players may not be comfortable with their data being sent to the developers, and then that data is a security risk for the company. Another concern would be segregating the skill level of that data as that might negatively impact the self-esteem of players marked as “easy”.

References

Goel, A. K., & Davies, J. (2020). Artificial Intelligence. In R. J. Sternberg (Ed.), The Cambridge Handbook of Intelligence (pp. 602–625). chapter, Cambridge: Cambridge University Press.