Thesis Topics

1. Digitizing and networking a boardgame

Many developers making physical games would love to bridge the gap and make digital versions of their game. A big challenge is making a version that is playable with a good UI that can also be played against other players. Hot seat multiplayer isn’t fun, so making a boardgame that is networked would be the best option. For this thesis I would try making a boardgame either of my own design (with help) or use an existing game to build. If I ignore AI, I could make a more complicated boardgame and focus on other elements like different setups for UI or focusing more on the networking/multiplayer aspect.

1. Building AI for Boardgames

Building AI for boardgames solves multiple issues boardgame developers have been facing. The first and biggest is playtesting. It is very difficult for developers to test their games without putting in massive amounts of hours. Video games have the luxury of having automated testing to alleviate this burden. With boardgames, AI could much more easily check the corner cases of a game and be on the lookout for degenerate strategies. Degenerate strategies are ones where a strategy could simplify the game to becoming monotonous if it’s the only valid strategy. AI for boardgames could also allow for testing of generated maps to find the very best.

The Thesis would focus on a single, simple game that I would most likely create. I would then build an AI to play the game. If possible I would make multiple Ais using multiple strategies to see which ones work best. I could also use it to test against different maps if the game has multiple and compare the strategies/compare balance of the different maps. The AI could also compare playing the regular game and using “House Rules”. This could confirm if some House Rules are better than others.

1. Using AI to generate boardgame maps.

The followup idea of the second would be to use AI to test different maps. It would be difficult to confirm the AI is working successfully on different maps, generate maps, and also be able to analyze the data, so I would have to be able to cut some corners here. Either I would need to get an API of an already existing game, or even use an already existing AI for boardgames to test the maps. The focus of the project then would be on procedurally generating maps. If AI is not possible, then lots of playtesting would have to be done to confirm the procedurally generated maps work.