**Diary:**

**19/05/17**

Met with Simon Powers to discuss ideas and get him as a supervisor.

He assured me that he’s had previous projects with no prior AI background or knowledge before that have gone well (bear in mind that the AI module only existed in the last term of my third year, and as a second year module). He said not to worry about not having been on the Intro to AI module as it was just that - an intro. I mentioned that I had access to that module on moodle though, and he said it can’t help to have a look, and so I said I’d read through the slides and maybe have a play with the practicals if I can. He also said that he’d send over some slides from the upcoming AI 4th year module, that I wouldn’t see until the second half of 4th year. When I asked to confirm that these were the slides I’d see later in 4th year he said that they are from that module and he imagines that the same slides will come up and the same things will be taught but there may be slight alterations.

Side note:

Hopefully that’ll be a big boost to my grade for that module as I’ll already have read the slides and worked with some AI

I asked if the title for the project registration was flexible once it had been submitted, and he said not to worry about the deadline too much or the title as it is just a means to get everyone signed up. That said, we went with the fairly vague title of “Evolution of Neural Network Controllers for Gameplay Behaviour,” and put Emma Hart and Kevin Sim as suggestions for second markers. Neil Urquhart was the third choice.

Simon said that as I’m a Games Dev student, the project has to have a gameplay element to it, which I was always planning anyway. I’m thinking of doing the card game Switch, as we played it all the time in the latter years of high school.

**02/06/17**

*Literally* cloud 9.

Exam results are in and I’ve miraculously passed both Advanced Databases and Fundamentals of Parallel Systems. No resits, time to focus on 4th year!

I’m going in to my final year with an average of 72% which means I have 18% of an available 25% towards my honours degree.

**17/06/17**

I ordered the recommended book for the 2nd year AI module that I was offered in the 2nd term of 3rd year (but I opted not to join for the sake of my degree grade), “Artificial Intelligence - A Modern Approach - Third Edition” by Stuart Russell and Peter Norvig.

**27/06/17**

I now own the aforementioned Artificial Intelligence book, and today I intend to read through chapters 1-3, whilst reading slides and looking at tutorials from the AI module I was offered last year, and answering any questions that I deem necessary and/or may come in handy for future reference.

**29/06/17**

Well that didn’t quite happen. I’m Currently reading through chapter 2, and I’ve been hit with a couple of ideas. The first is to create a program that can solve crossword puzzles using the clues given and the oxford dictionary (this isn’t related to the honours project but it is an AI related idea so I wanted to write it down incase it somehow becomes relevant in future).

The second idea, is that if we do indeed go ahead with my idea of teaching an intelligent agent to play the card game Switch (with the rules I played at school when I was supposed to be studying), it could go one of two ways; The initial idea was to have the user play against 1-3 AI agents. However, the thought that entered my mind tonight was this: What if it was the user, 2 programmed players that know all of the rules and how to play, and a third agent that has no idea how to play the game, and has to learn from watching the other players and being told that it can’t play the card that it just attempted to.

It’s just a thought, but may be worth pitching to Simon soon.

A further, probably insignificant thought, is that perhaps I can get old school mates to play the game for me as a way to teach the agents not to just follow my play-style, but to think for itself as there are other ways to play. For example, If I have three 2s, I might play them all at once, knowing the likelihood of the fourth 2 coming back to bite me is very slim, even if I'm only playing against one other player. However, my friend Declan is a bit of a wind-up merchant. Even if he has all four, and knows fine well that his opponent will have to pick up two cards after he plays a 2, he will play all four 2s one by one for maximum seethe from the opposing player. He might not see the point in doing that to a machine, but that is something he does and is just one way that play-styles can vary in the game. Some players may exercise caution with the black queens, and others may just go all out and play aggressively.

Admittedly, these are late-night thoughts and may be discovered to be inane ramblings at a later stage.

**01/07/17**

Right, it’s July. Chapter 3 is happening today at any cost.

**10/07/17**

Simon sent over the slides that we’d talked about at our initial meeting today. I’ve been working through the book and slides from the intro to AI module and was actually going to email him to request them soon!

**14/09/17**

Met with Simon and discussed the idea of a 4 player game with a human player, 2 hardcoded players, and an agent that has no idea how to play the game. Emailed Gregory to check that the game was sufficiently related to games and he is satisfied with the proposal.

Confessed that the wheels had come off with reading the book but he said that it wasn’t a big deal as that book isn’t specifically going to help much anyway.

Simon has sent me a link to NEAT and I told him I’d have a look at that, the lecture slides he sent me previously, and the IPO document over the weekend and be prepared to discuss at the same time next week - 10:30 on Thursday in C42.

**21/09/17**

At today’s meeting, Simon and I had a look at my IPO document, and made some adjustments. I now need to find sources to cite within the IPO document (just from abstracts of a few papers probably), and I’ll send it back over to Simon before submitting it (if Kevin Sim ever puts a submission portal on Moodle…?!).

The objectives for next week are:

* Read and take notes from lecture slides Simon sent
* Read about NeuroEvolution of Augmenting Topologies (NEAT) library
* Find some sources (and add them to the IPO)
* Research neural networks
* Research evolutionary algorithms
* Research multi-layer perceptrons