EDINBURGH NAPIER UNIVERSITY

SCHOOL OF COMPUTING

PROJECT DIARY

Student: Ryan O'Flaherty   **Supervisor:** Simon Powers

Date: 21/09/17   **Last diary date:**

Objectives:

- Create a draft of the Initial Project Overview (IPO) document and send it to Simon to review it at the next meeting
- Look over NeuroEvolution of Augmenting Topologies (NEAT) library
- Read slides Simon sent me over the summer

Progress:

- ✓ Create a draft of the Initial Project Overview (IPO) document and send it to Simon to review it at the next meeting
- ○ Look over NeuroEvolution of Augmenting Topologies (NEAT) library
- ○ Read slides Simon sent me over the summer

Supervisor's Comments:

Objectives for next week:
- 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

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PROJECT DIARY

Student: Ryan O'Flaherty   **Supervisor:** Simon Powers

Date: 28/09/17   **Last diary date:** 21/09/17

Objectives:

- Revise draft of the Initial Project Overview (IPO) document and send it to Simon to review it at the next meeting
- Look over NeuroEvolution of Augmenting Topologies (NEAT) library
- Read slides Simon sent me over the summer

Progress:

- ✓ Revise draft of the Initial Project Overview (IPO) document and send it to Simon to review it at the next meeting
- o Look over NeuroEvolution of Augmenting Topologies (NEAT) library
- o Read slides Simon sent me over the summer

Supervisor's Comments:

Objectives for next week:
- Revise draft of the Initial Project Overview (IPO) document and send it to Simon to review it at the next meeting
- Send Simon rules to Switch
- Make a start on finding sources

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PROJECT DIARY

Student: Ryan O'Flaherty   **Supervisor:** Simon Powers

Date: 05/10/17   **Last diary date:** 28/09/17

Objectives:

- Revise draft of the Initial Project Overview (IPO) document and send it to Simon to review it at the next meeting
- Send Simon rules to Switch
- Make a start on finding sources

Progress:

- ✓ Revise draft of the Initial Project Overview (IPO) document and send it to Simon to review it at the next meeting
- ✓ Send Simon rules to Switch
- ✓ Make a start on finding sources

Supervisor's Comments:

Objectives for next week:
- Start looking at literature for week 9 report
- Written evidence of having looked at literature

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PROJECT DIARY

Student: Ryan O'Flaherty   **Supervisor:** Simon Powers

Date: 16/10/17   **Last diary date:** 05/10/17

Objectives:

- Start looking at literature for week 9 report
- Written evidence of having looked at literature

Progress:

- ✓ Start looking at literature for week 9 report
- ✓ Written evidence of having looked at literature

Supervisor's Comments:

Objectives for next week:
- Make a start on the barebones version of the game
- Upload IPO
- Read up on neural networks maths
- Read previous dissertation
- Continue literature review

Comments:
We could start with one agent that plays against a hardcoded strategy in the beginning and not worry about a human yet, then potentially move on to co-evolving two agents playing against each other in latter stages to further improve their learning.

Rules like forcing to play a certain card could be difficult to implement, so start with just the black queen and jack rules for now and add others in later if it goes well.

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PROJECT DIARY

Student: Ryan O'Flaherty   **Supervisor:** Simon Powers

Date: 20/10/17   **Last diary date:** 16/10/17

Objectives:

- Make a start on the barebones version of the game
- Upload IPO
- Read up on neural networks maths
- Read previous dissertation
- Continue literature review

Progress:

- ✓ Make a start on the barebones version of the game
- ✓ Upload IPO
- ✓ Read up on neural networks maths
- ✓ Read previous dissertation
- ✓ Continue literature review

Supervisor's Comments:

Objectives for next week:
- Expand background section and write literature review

I showed Simon my thin, weak attempt at a literature review. I explained to him that I'd been looking at other dissertations and they all seem to have completely different ways of doing literature reviews, and so I really had no idea what I was doing. We discussed what I had and concluded that what I had, albeit lackluster, was a background section. Simon said that he preferred that style of dissertation where they lay out a description of what things that are going to be used are and how they work, before going on to critique how others have used them in other work in the literature review.

Student: Ryan O'Flaherty

Supervisor: Simon Powers

Date: 26/10/17

Last diary date: 20/10/17

Objectives:

- Expand background section and write literature review

Progress:

- ✓ Expand background section and write literature review

Supervisor's Comments:

Objectives for next week:
- Expand background section and literature review

Comments:
- Add AI for Games section to background – particularly card games but also board ones
- Neural networks – point out it's a control problem rather than pattern classification
- Look up RoboSoccer
- Sections – why neural networks | why evolve neural networks | why co-evolve topologies as well as weights
- PacMan and Mario examples
- How intelligent are they?

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PROJECT DIARY

Student: Ryan O'Flaherty   **Supervisor:** Simon Powers

Date: 02/11/17   **Last diary date:** 26/10/17

Objectives:

- Expand background section and literature review

Progress:

✓ Expand background section and literature review

Supervisor's Comments:

Objectives for next week:
- Expand background section and literature review

Comments:
- We want around 30 references and 10 to 15 pages
- Neural networks section is good but it needs more references – I won't be only one to have said these things
- Really likes PacMan part but wants it expanded to look at non-games controllers for robots etc
- Look at Google TensorFlow

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PROJECT DIARY

Student: Ryan O'Flaherty   **Supervisor:** Simon Powers

Date: 09/11/17   **Last diary date:** 02/11/17

Objectives:

- Expand background section and literature review

Progress:

- ✓ Expand background section and literature review

Supervisor's Comments:

Objectives for next week:
- Finalise literature review and attach it in an email to Kevin and Simon to set up review meeting

Comments:
- Fill in intro/aims and objectives sections
- Add methodology and results with subheadings to explain what kind of experiments and results we are expecting
- Add critical evaluation section and gantt chart(s)
- Other minor suggestions