Project Proposal

G53IDS

Project Title: Applying Evolutionary Algorithms to Pokémon Team Building

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1 Background and Motivation

Competitive Pokémon is becoming an a thing.

2 Aims and Objectives

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3 Work Plan

To help outline the project flow and I have created a gantt chart (found in the appendix) and a the following descriptions of each portion.

Documentation

Project Proposal Write the project proposal and ethics form for approval of supervisor, due 13th October.

Revised Project Proposal Any revisions to the project proposal that need to be made after supervisor feedback, due 23rd October

Interim Report Write the interim report summarising the work so far, due 8th December.

Dissertation Write the final dissertation, due 24th April.

Research

Research EAs Research into the various Evolutionary Algorithms, like Genetic Algorithms, Memetic Algorithms & Multimeme Memetic Algorithms.

Review languages for EAs Primarily seeing if python has suitable features required to make the development of evolutionary algorithms easier or whether Java would be better suited.

Research Representation Look into various representation methods that could be applied to the problem.

Development

Create GA Structure Set up the basic main loop and the relevant interfaces.

Representation Code the structure that the model will be represented by to be used as chromosomes in the Evolutionary Algorithm.

Data import Build methods to import the data that is needed at various points in the running of the algorithm.

Validation Method Build a method that will check that a chromosome is valid, for use after other methods so that invalid solutions aren't created.

Basic Methods for GA Create trivial methods for each stage of the Genetic Algorithm to allow for test runs.

Miscellaneous

Install Software Install and configure the relevant software and libraries that are required for the project.

Other Commitments

Welcome Week First week of the year, time set aside to allow for settling in as well as running various welcome events.

Christmas Holiday Time off after Autumn term, Although not completely set aside allows for some time to relax.

Autumn Exams Potentially could have exams for the entire 2 weeks so is set aside to allow for revision and the exams themselves.

Easter Holiday Time off after Spring term, As no teaching is happening will give more time to concentrate on coursework and dissertation.

References

[1] Griffin McElroy. Becoming the very best: The pokemon world championships. https://www.polygon.com/2013/7/20/4539528/becoming-the-very-best-the-pokemon-world-championships, July 2013.