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**Artificial Evolution**

**BSc Computer Science**

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**11 April 2016**

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# Abstract

Artificial Intelligence Research Project which aims to establish whether Darwin’s theory of natural selection can be used to solve algorithmic problems. Using the Agile Methodology, my first goal is building an environment to force the agents (something that perceive its environment through sensors and acts upon it) to evolve and test out whether they modify with each generation. I will be looking to see if they adapt to the environment just as animals do according to Darwin’s theory. I will be using Java to store agents DNA, Clojure to retrieve DNA, translate it into commands, and send it to NetLogo where agents interact with the set environment. Challenges agents will face includes getting to food first. This will require them not only to be fast but also sense food that is far. The agents that performed well will continue to live and also have offspring. The expected output is agents will evolve to sense food that is really far away and also are really fast. . All results will be stored to see how the agents evolved over time. I will also be looking at how this evolution process can be used to solve real life problems.

# Acknowledgements

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# Introduction

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# Methodology

# Cheese

# Research

## NetLogo

## Java

## Clojure

## Integration

## Choice of software development tools used

### Eclipse

### Netlogo

### Github

For this project, I have chosen to use GitHub for Version control. I have realised that I will be using the university computers as well as my laptop home. While working on previous projects I found version control is one of the baggiest problems when working on multiple computers. I often found myself having multiple version not know in which version I implemented a feature. By using Github, not only would I be able to work on one version using multiple computers, it would also be backed up and I would have constant access to it as long as I have an internet access.

I first used git hub for my Software architecture group work and became accustomed with the advantages and disadvantages of using GitHub. For my project to efficiently use GitHub I took it upon myself to do a tutorial so I am aware of all the features it has to offer and I can use them efficiently.

I have looked into version control software for Microsoft word for Git and looked at softwares such as Pandoc and

# Design

This is the design section

## Concept Design

## Netlogo

## Java

## Clojure

## Integration

# Implementation

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# Testing

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# Evaluation

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# Appendix A