**Advanced Computational Techniques**

SSE 635

Dr. MacNeil

Spring 2017

**Project III**

Brent Bitler

Matthew Robison

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Introduction

## Background

SSE 635’s purpose is to educate us on the use of advanced computational techniques and their applications. Project III’s focus is on neural networks.

## Purpose

For Project III, we were directed to implement an application to demonstrate our mastery of Neural Networks since this is our first course in the realm of computational techniques. Our approach was to

Back Propagation

## Overview

Before

Conclusion

## Overview

In conclusion, much was learned about neural networks.

Appendix

## Program.cs

Bibliography

[1] Engelbrecht, Andries P. Computational Intelligence: An Introduction, (2nd ed.). Wiley, 2007.

Activity Log - Bitler

|  |  |  |
| --- | --- | --- |
| Date | Time (mins) | Description |
| *1/9/17* | *60* | *Looked through Naïve GA* |
| *1/10/17* | *60* | *Looked through and worked Naïve GA* |
| *1/11/17* |  |  |
| *1/12/17* | *120* | *Research GA’s online for topic ideas* |
| *1/13/17* | *180* | *Read Ch 9 - GA* |
| *1/14/17* | *90* | *Read Ch 9 - GA* |
| *1/15/17* |  |  |
| *1/16/17* | *120* | *Begin constructing class structure of string unscramble program* |
| *1/17/17* | *120* | *Begin chromosome class* |
| *1/18/17* | *120* | *Continue working chromosome class, begin developing population class* |
| *1/19/17* |  |  |
| *1/20/17* |  |  |
| *1/21/17* | *60* | *Finish chromosome class* |
| *1/22/17* | *240* | *Continue working population class* |
| *1/23/17* | *120* | *Connector class* |
| *1/24/17* | *30* | *Come up with initial variable settings* |
| *1/25/17* |  |  |
| *1/26/17* | *240* | *Begin generating report* |
| *1/27/17* | *180* | *Put together test data* |
| *1/28/17* | *360* | *Conclude paper, graphs, etc* |
| *1/29/17* | *180* | *Final review of paper* |
| *1/30/17* | *15* | *Submit paper* |
| 1/31/17 |  |  |
| 2/1/17 | 90 | Begin reading Ch 20 – Fuzzy sets |
| 2/2/17 | 120 | Continue reading Ch 20 – Fuzzy sets |
| 2/3/17 | 120 | Begin Ch 21 – Fuzzy Logic and Reasoning |
| 2/4/17 |  |  |
| 2/5/17 | 120 | Continue Ch 21 – Fuzzy Logic and Reasoning |
| 2/6/17 | 90 | Read Ch 22, 23 – Fuzzy controllers and Rough sets |
| 2/7/17 | 120 | Watch tutorials on fuzzy logic |
| 2/8/17 | 120 | Develop class structure for Heating/Cooling app |
| 2/9/17 | 120 | Work on Point class |
| 2/10/17 | 180 | Work on FuzzySet, MembershipFunction, and Region classes |
| 2/11/17 | 120 | Continue class development |
| 2/12/17 |  |  |
| 2/13/17 | 300 | Begin generating report |
| 2/14/17 |  |  |
| 2/15/17 | 360 | Continue report |
| 2/16/17 | 240 | Continue report |
| 2/17/17 | 240 | Conclude paper, graphs, etc |
| 2/18/17 | 45 | Final review of paper |
| 2/19/17 |  |  |
| 2/20/17 | 15 | Submit paper |
| *Project 1* | *2295* |  |
| *Project 2* | 2400 |  |
| Project 3 |  |  |
| TOTAL | 4695 |  |

Activity Log - Robison

|  |  |  |
| --- | --- | --- |
| Date | Time (mins) | Description |
| *1/9/17* |  |  |
| *1/10/17* |  |  |
| *1/11/17* | *120* | *Reading Chapter 8* |
| *1/12/17* | *120* | *Reading Chapter 9* |
| *1/13/17* | *90* | *Working on Project 0* |
| *1/14/17* |  |  |
| *1/15/17* | *60* | *Working on Project 0* |
| *1/16/17* |  |  |
| *1/17/17* | *120* | *Started Development of GA* |
| *1/18/17* |  |  |
| *1/19/17* |  |  |
| *1/20/17* | *240* | *Continued Development on GA* |
| *1/21/17* | *480* | *Continued Development on GA* |
| *1/22/17* | *120* | *Started Developing Report* |
| *1/23/17* |  |  |
| *1/24/17* |  |  |
| *1/25/17* |  |  |
| *1/26/17* |  |  |
| *1/27/17* | *120* | *Continue Developing Report* |
| *1/28/17* |  |  |
| *1/29/17* | *180* | *Continue Developing Report* |
| *1/30/17* | *90* | *Formatting Report*  *Upload Report* |
| *1/31/17* |  |  |
| *2/1/17* | *120* | *Reading Chapter 20* |
| *2/2/17* | *120* | *Reading Chapter 21* |
| *2/3/17* |  |  |
| *2/4/17* | *180* | *Reading Chapter 22* |
| *2/5/17* | *90* | *Reading Chapter 23* |
| *2/6/17* |  |  |
| *2/7/17* |  |  |
| *2/8/17* | *120* | *Develop class structure for Heating/Cooling app* |
| *2/9/17* | *240* | *Development of MembershipFunction Class* |
| *2/10/17* |  |  |
| *2/11/17* | *240* | *Development of FuzzySet Class* |
| *2/12/17* | *240* | *Testing and Debugging Heating/Cooling app* |
| *2/13/17* | *180* | *Begin generating report* |
| *2/14/17* |  |  |
| *2/15/17* | *240* | *Continue report* |
| *2/16/17* | *180* | *Continue report* |
| *2/17/17* | *120* | *Continue report* |
| *2/18/17* | *120* | *Final review of paper* |
| *2/19/17* |  |  |
| *2/20/17* | *15* | *Submit paper* |
| *Project 1* | *1740* |  |
| Project 2 | 2625 |  |
| TOTAL | 4365 |  |