Satellite Imagery Land use classification using Machine Learning

CS39440 Major Project Report

Author: Abdullah Durrani (abd15@aber.ac.uk)
Supervisor: Dr/Prof. Tossapon Boongoen (tob45@aber.ac.uk)

23rd April 2024 Version: 1.0 (Draft)

This report was submitted as partial fulfilment of a BSc degree in Artificial Intelligence and Robotics (GH76)

Department of Computer Science
Aberystwyth University
Aberystwyth
Ceredigion
SY23 3DB
Wales, U.K.

Declaration of originality

I confirm that:

• This submission is my own work, except where clearly indicated.

Name

- I understand that there are severe penalties for Unacceptable Academic Practice, which can lead to loss of marks or even the withholding of a degree.
- I have read the regulations on Unacceptable Academic Practice from the University's Academic Registry (AR) and the relevant sections of the current Student Handbook of the Department of Computer Science.
- In submitting this work I understand and agree to abide by the University's regulations governing these issues.

Date			
Consent to share this work			
By including my name below, I hereby agree to this project's report and technical work being made available to other students and academic staff of the Aberystwyth Compute Science Department.			
Name			
Date			

Acknowledgements

Abstract

Contents

1	Background & Objectives	1
	1.1 Background	1
	1.2 Analysis	1
	1.3 Process	1
2	Design	2
3	Implementation	3
4	Testing	4
5	Evaluation	5
Re	eferences	6
Αį	ppendices	6
Α	Use of Third-Party Code, Libraries and Generative Al	8
	1.1 Third Party Code and Software Libraries	8
	1.2 Generative Al	

List of Figures

List of Tables

Chapter 1

Background & Objectives

- 1.1 Background
- 1.2 Analysis
- 1.3 Process

Chapter 2 Design

Chapter 2

Design

Chapter 3 Implementation

Chapter 3

Implementation

Chapter 4 Testing

Chapter 4

Testing

Chapter 5 Evaluation

Chapter 5

Evaluation

References

- [1] N. Taylor, "MMP_S08 Project Report and Technical Work," http://blackboard.aber.ac.uk/, Feb. 2019, accessed February 2019.
- [2] W. Press *et al.*, *Numerical recipes in C*. Cambridge University Press Cambridge, 1992, pp. 349–361.
- [3] M. Neal, J. Feyereisl, R. Rascunà, and X. Wang, "Don't touch me, I'm fine: Robot autonomy using an artificial innate immune system," in *Proceedings of the 5th International Conference on Artificial Immune Systems*. Springer, 2006, pp. 349–361.
- [4] H. M. Dee and D. C. Hogg, "Navigational strategies in behaviour modelling," *Artificial Intelligence*, vol. 173(2), pp. 329–342, 2009.
- [5] Various, "Fail blog," http://www.failblog.org/, Aug. 2011, accessed August 2011.
- [6] S. Duckworth, "A picture of a kitten at Hellifield Peel," http://www.geograph.org.uk/photo/640959, 2007, copyright Sylvia Duckworth and licensed for reuse under a Creative Commons Attribution-Share Alike 2.0 Generic Licence. Accessed August 2011.
- [7] Apache Software Foundation, "Apache POI the Java API for Microsoft Documents," http://poi.apache.org, 2014.
- [8] —, "Apache License, Version 2.0," http://www.apache.org/licenses/LICENSE-2.0, 2004.

Appendices

Appendix A

Use of Third-Party Code, Libraries and Generative Al

- 1.1 Third Party Code and Software Libraries
- 1.2 Generative Al