Untitled Honours Project

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Except where otherwise indicated, this thesis is my own original work.

Alasdair Nam Thang Tran
21 August 2015

To my parents.

Acknowledgements

Acknowledgement stuff ...

Abstract

Abstract of my thesis…

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Chapter 1

Introduction

1.1 Motivation

1.2 Organisation

Chapter 2

Background

2.1 Spectroscopy and Photometry

Differences between spectroscopy and photometry.

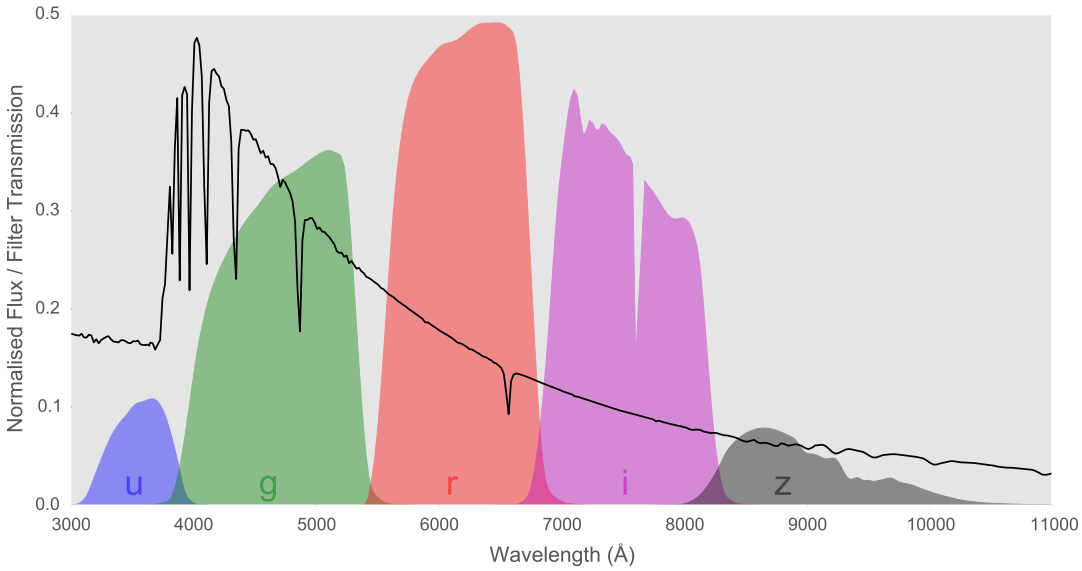


Figure 2.1: Vega spectrum.

2.2 Machine Learning

Here a citation from [Wolf 2014]

2.3 Active Learning

Chapter 3

Experimental Protocol

3.1 Hyper-parameter Optimisation

3.2 Active Learning Routine

3.3 Class Proportion Estimation

3.4 Performance Measures

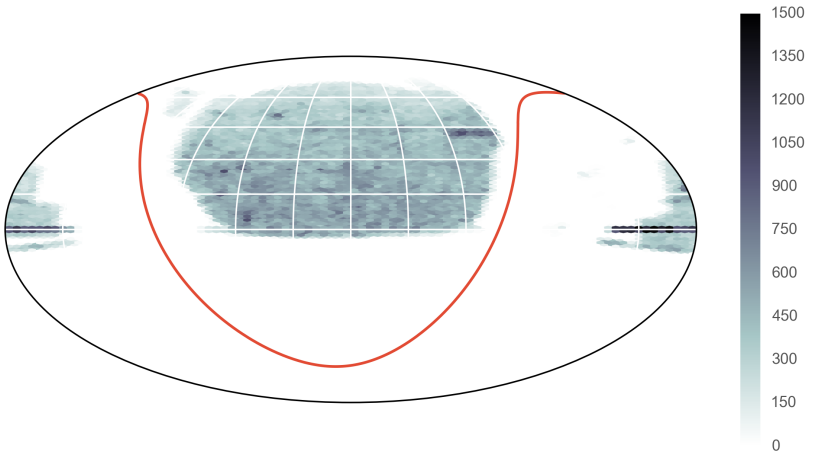
Chapter 4

Results and Discussion

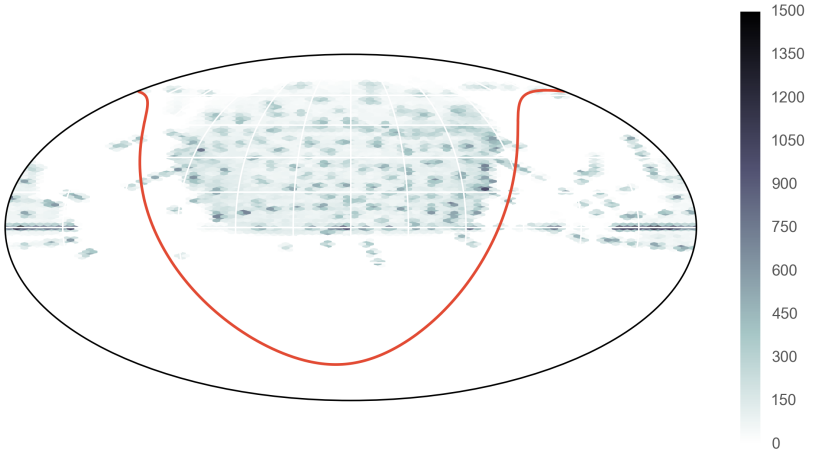
The dataset
: Learning curve with random sampling.

4.1 Active Learning Results

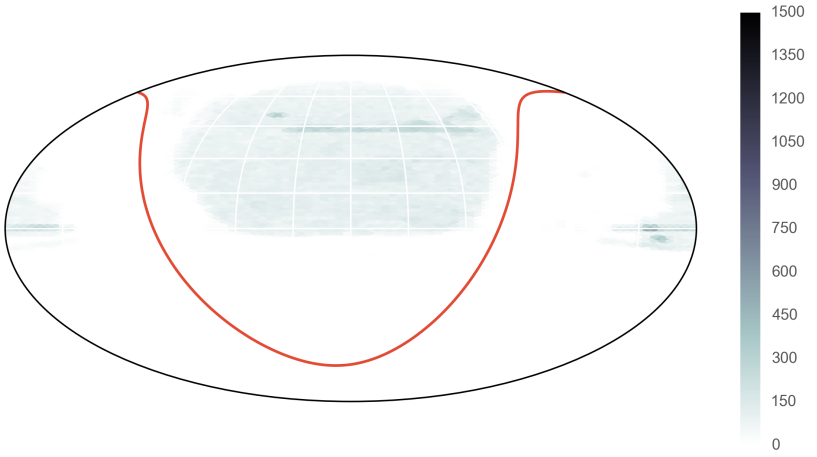
4.2 Some More Results



(a) Distribution of galaxies.



(b) Distribution of stars.



(c) Distribution of quasars.

Figure 4.1: Distribution of the classes in the training set.

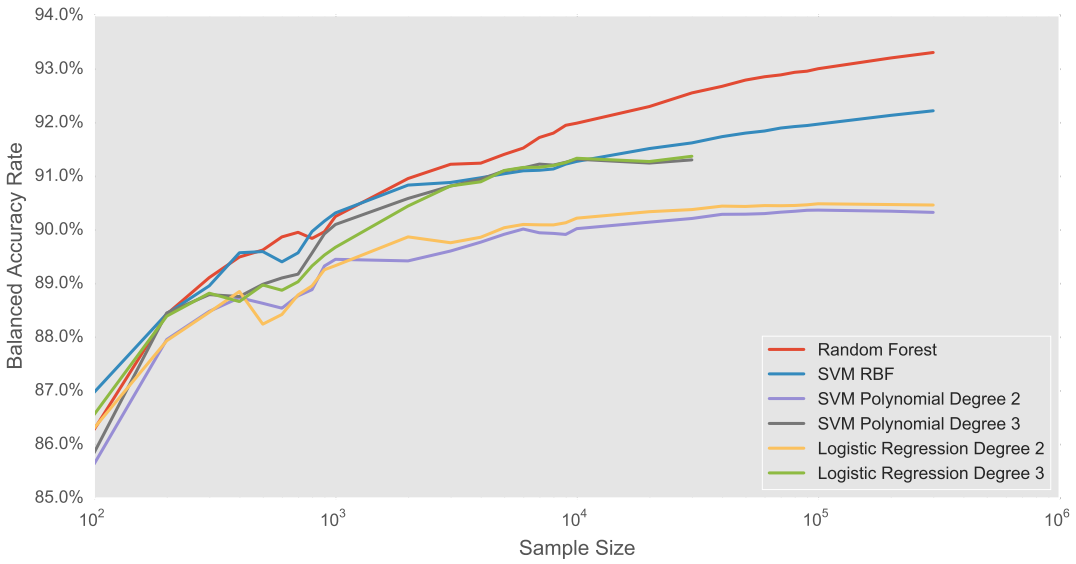


Figure 4.2: Learning curves.

Chapter 5

Conclusion

5.1 Future Work

Appendix A

Guide to Using mclearn

A.1 Installation

A.2 Usage and Examples

Appendix B

Vectorisation of the Variance Estimation

In estimating the variance of the unlabelled pool, there are two matrices we wish to compute.

Bibliography

WOLF, C. 2014. Milky Way dust extinction measured with QSOs. *Monthly Notices of the Royal Astronomical Society 445*, 4252–4258. (p. 3)