

THESIS TITLE - TO BE DETERMINED

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and submitted in partial fulfillment of the requirements for the degree of

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Abstract

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Text of abstract.

Acknowledgments

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Chapter 1

Introduction

1.1 Motivation

Recent advances in neural network architecture and utilization of large amounts of data have led to astonishing results in fields such as image recognition, natural language processing, and speech recognition [add citations].

Unfortunately, it remains to be seen whether such techniques can significantly outperform classical statistical methods [3]. This opens the door for novel ideas to be tried and benchmarked against existing methods.

Time series classification in general has seen extremely competitive results using nearest neighbour techniques [2]. There are many variations on how to do this but fundamentally it involves a distance calculation between two sequences, followed by a one nearest neighbour classifier. The most common distance functions used for this is the Euclidean distance or some variant thereof.

Detecting abrupt changes in a time series is a common task in time series analysis and signal processing. Many outlier detection methods exist such as . A closely related topic is change point detection which focuses on discerning when possible regime shifts occur in a time series. Here the regime shifts indicate collective outliers and are considered out of place when compared to another regime in the time series.

1.2 Previous Work

Broadly speaking there are two main categories that methods fall into, parametric and non-parametric modelling.

Nikolov et al. describe a latent source model that is a data-driven non-parametric classifier that detects trends on twitter using the counts of a twitter string or hash-tag.

1.3 Our Contributions

Lay out the contributions of this work.

Chapter 2

Chapter 2

2.1 Chapter 2 Section

2.1.1 Chapter 2 Subsection

Subsection Test

Bibliography

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