DETECTING HEALTH MISINFORMATION IN WEB PAGE TEXT USING DEEP LEARNING METHODS

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I would like to acknowledge ...

STATEMENT OF CANDIDATE

I, (insert name here), declare that this report, submitted as part of the requirement for the award of Bachelor of Engineering in the School of Engineering, Macquarie University, is entirely my own work unless otherwise referenced or acknowledged. This document has not been submitted for qualification or assessment an any academic institution.

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ABSTRACT

This is where you write your abstract ...

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Chapter 1

Introduction

With the popularity and ubiquity of social platforms in today's society, the amount and the rate at which information is able to propagate online greatly outnumbers the manpower available that can evaluate the accuracy and determine the amount of misinformation within online articles. Considering factors such as the 'click-bait' nature and the lack of rigour surrounding the publishing of online content [1] has caused an increase in the number of 'fake news' related content [2]. This can be attributed to the trending or discover-based model commonly implemented by social media platforms that aim to maximize the reach and interaction of the content with no regards to its quality. In specific domains, such as for health related articles, the spread of misinformation can lead to the mistreatment and mismanagement of a range of health conditions, views on vaccination decisions is a commonly referenced example.

One of the key components required to minimize the propagation of misinformation online is the ability to automatically evaluate and quantify the credibility of the information within articles. However, traditional automated methods, such as machine learning-based techniques, still need the domain knowledge of experts to be able to extract the features required by the model. Thus, this project aims to investigate the performance of deep learning models in evaluating the credibility of information within domain specific articles, specifically, this project will focus on evaluating the credibility of online health articles related to vaccination.

1.1 Deep Learning

Is when you think deeply of things.

- Evaluate the performance of deep learning based text classification algorithms in determining the amount of misinformation present within health related online articles.

- EITHER investigate the effectiveness of attention based mechanisms in explaining the underlying workings of the algorithm OR
- Investigate the effectiveness of the application of transfer learning methods on the algorithm as the amount of data available will be limited.

1.2 Project Overview

Introduction for this section

1.2.1 Project Scope

Main Goals

-

Sub Goals

- Utilize attention mechanisms to understand how the previously evaluated models work?
- OR Evaluate the performance of transfer learning

1.2.2 Project Timeline

When things should be done by

1.2.3 Project Cost

Expected cost of the project

Chapter 2

Background and Related Work

2.1 Things to cover

- Previous approaches (e.g. NLP, ML) and lead to why DL are/should be preferred.
- Deep Learning background info
- Deep learning based approaches
- How attention or transfer learning works
- Fake news challenge top 4 solutions

2.2 Prior Approaches

In a

Channel Knowledge at the Base Station

The channel.

MAC-BC Duality

In order to find an a

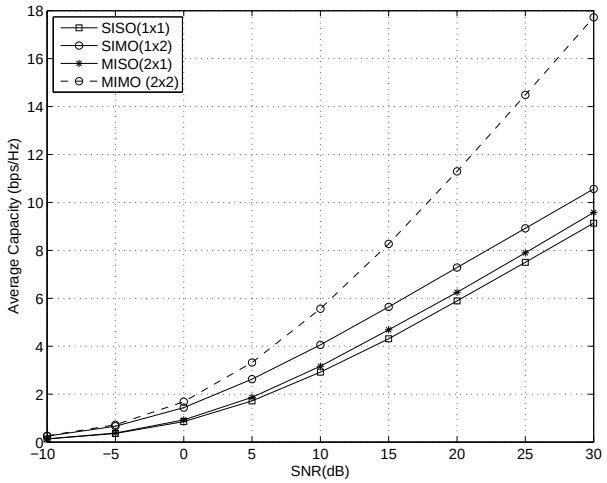

Figure 2.1: Comparison of capacity for single and multiple antenna systems.

Chapter 3

User Selection in MIMO Broadcast Channels

3.1 Introduction

- We identify the limitations of current algorithms and situations where these algorithms are suboptimal.
- We propose modifications of user selection algorithms that reduce execution complexity but retain efficiency.
- We develop analytical bounds to show that the proposed algorithms are asymptotically effective.
- We compare the performance of the proposed user selection algorithms with the current user selection algorithms under both DPC and ZF precoding techniques.
- We show that the proposed user selection algorithms reduce the computational complexity while retaining a high degree of effectiveness in terms of sum-capacity, as compared to other user selection algorithms, under both precoding techniques.

3.2 Related Work

In this section, we review some current user selection algorithms for MIMO broadcast wireless channels.

A user select.

3.3 System Model

We now consider a

This chapter examined current user selection algorithms for wireless broadcast channels. It compared the performance of the algorithms, identified situations where they were suboptimal and developed modifications to reduce computation time without reducing effectiveness. In particular, we presented a modified user selection algorithm, and then two variants were developed that could be used for both ZF and DPC precoding. It was shown that the proposed algorithms work reasonably well compared to other user selection algorithms. The modifications were tested and suggestions for setting parameters were made.

Chapter 4

Conclusions and Future Work

4.1 Conclusions

This

Chapter 5

Abbreviations

AWGN	Additive White Gaussian Noise
BC	Broadcast Channel
BS	Base Station
CSI	Channel State Information
CSIR	Channel State Information at Receiver
CSIT	Channel State Information at Transmitter
dB	Decibels
DPC	Dirty Paper Coding
GS	Gram-Schmidt
RVQ	Random Vector Quantisation
SISO	Single Input Single Output
SNR	Signal to Noise Ratio
SINR	Signal to Interference plus Noise Ratio
MISO	Multiple Input Single Output
SIMO	Single Input Multiple Output
MIMO	Multiple Input Multiple Output
MMSE	Minimum Mean Square Error
MRC	Maximum Ratio Combining
QoS	Quality of Service
TDD	Time Division Duplex
FDD	Frequency Division Duplex
ZF	Zero-Forcing
ZFBF	Zero-Forcing Beamforming
ZMCSCG	Zero Mean Circularly Symmetric Complex Gaussian

Appendix A

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A.1 Overview

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A.2 Name of this section

here is the content of this section ...

Appendix B

name of appendix B

B.1 Overview

here is the Overview of appendix B ...

B.2 Name of this section

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