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

Why we should care about minimizing the spread of misinformation online:

- The large amount of information being passed around today (where a large majority of the content being shared is not verified). This is largely due to the ubiquity of social network sites (SNS) today whose main function is to spread information, factual or not.
- Information that is classified to be as rumors tend to generally have more reach than non-rumor based information (3x more shares)
- With the increase prevalence of social media, popular users and communities are capable of spreading factually incorrect content as they are generally not expected to filter the content they share based on its factual accuracy
- The increase use of 'trending', 'discover' etc. sections that encourage users to post content that aim to maximize the number of clicks their content receive rather than the accuracy and reliability of the content

1.1 Project Goal

This project aims to...

- Evaluate the performance of deep learning based text classification algorithms in classifying misinformed articles within domain specific health related online content.
- EITHER investigate the effectiveness of attention based mechanisms in explaining the underlying workings of the fake news classifiers developed OR
- Investigate the effectiveness of the application of transfer learning methods on the general fake news classifiers.

1.2 Project Planning

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

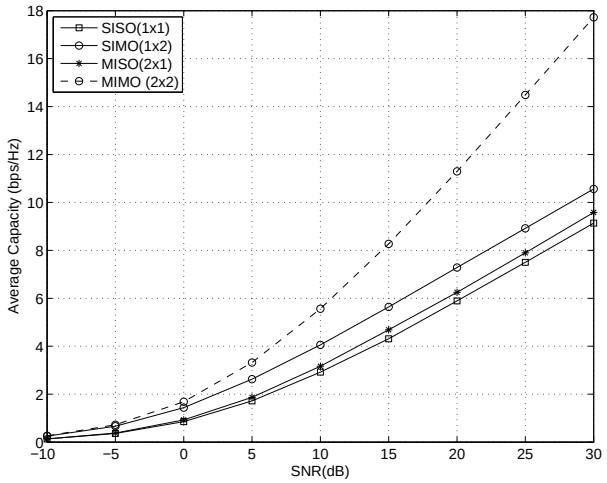

Figure 2.1: Comparison of capacity for single and multiple antenna systems.

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.

This chapter is organised as follows. Section 3.2 presents work related to this chapter. In Section 3.3, the system model is described. Section **??** describes precoding techniques. Section **??** is devoted to the proposed user selection algorithms and presents the analytical bounds on the sum-capacity of the proposed user selection algorithms. Performance analysis of different user selection algorithms along with the proposed user selection algorithms is presented in Section **??**. Finally, Section **??** concludes the chapter.

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 [1] 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

name of appendix A

A.1 Overview

here is the Overview of appendix A ...

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

here is the content of this section ...

Bibliography

[1] M. Andrews, "A survey of scheduling theory in wireless data networks," *Proc. of the IMA 2005 Summer Workshop in Wireless Comuunications*, 2005.