Early Detection of MCI that progresses to dementia - An Interdisciplinary Approach

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Abstract

Acknowledgements

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Chapter 1

Introduction

1.1 Introduction

Dementia has been identified as one of the one of the biggest global health
and social care challenges facing the world today. A recent report suggests
that in 2015 there were 46 million people with a diagnosis of dementia and
that number is expected to hit 131.5 million by 2050 [**?**]. The report also
states that the worldwide cost of dementia in 2018 is estimated to be in the
region of one trillion US dollars.

In 2009, the UK's Department of Health designed it's National Demen-
tia strategy and as part of this made early diagnosis and support one of it's
key priorities [**?**]. A lot of work has gone into trying to find ways of im-
proving the early diagnosis of Alzheimer's Disease (AD) and Mild Cognitive
Impairment (MCI) with research focused on two distinct areas - identify-
ing biological markers and analyzing the cognitive decline of those who are
suspected to have the disease [**?**]. As our aging population increases, the
potential burden on health care and social services will increase and thus it
is important that we utilize technology wherever possible to aid clinicians
in the detection of MCI and AD. At the present time diagnosis is typically
conducted at memory clinics by trained clinicians [**?**]. I theorize that we
may be able to enable an earlier diagnosis of those with MCI and AD us-
ing samples of spontaneous speech, natural language processing (NLP) and
machine learning (ML).

$$\alpha = \sqrt{\beta} \tag{1.1}$$

1.1.1 Subsection Heading Here

Write your subsection text here.

1.2 Conclusion

Write your conclusion here.

Chapter 2

Background and Related Work

2.1   Introduction

Here is the text of your introduction.

$$\alpha = \sqrt{\beta} \tag{2.1}$$

2.1.1   Subsection Heading Here

Write your subsection text here.

2.2   Conclusion

Write your conclusion here.

Chapter 3

Systematic Review of NLP and Machine Learning Research

3.1 Introduction

Here is the text of your introduction.

$$\alpha = \sqrt{\beta} \tag{3.1}$$

3.1.1 Subsection Heading Here

Write your subsection text here.

3.2 Conclusion

Write your conclusion here.

Chapter 4

Delphi Methodology and developing consensus on how best to collect language samples using technology

4.1   Introduction

Here is the text of your introduction.

$$\alpha = \sqrt{\beta} \tag{4.1}$$

4.1.1   Subsection Heading Here

Write your subsection text here.

4.2   Conclusion

Write your conclusion here.

Chapter 5

Development of a pipeline that processes language data accurately

5.1 Introduction

Here is the text of your introduction.

$$\alpha = \sqrt{\beta} \tag{5.1}$$

5.1.1 Subsection Heading Here

Write your subsection text here.

5.2 Conclusion

Write your conclusion here.

Chapter 6

Analysis of DementiaBank dataset

6.1   Introduction

Here is the text of your introduction.

$$\alpha = \sqrt{\beta} \tag{6.1}$$

6.1.1   Subsection Heading Here

Write your subsection text here.

6.2   Conclusion

Write your conclusion here.

Chapter 7

Pilot study of the methodology developed

7.1   Introduction

Here is the text of your introduction.

$$\alpha = \sqrt{\beta} \tag{7.1}$$

7.1.1   Subsection Heading Here

Write your subsection text here.

7.2   Conclusion

Write your conclusion here.

Chapter 8

General Discussion

8.1   Introduction

Here is the text of your introduction.

$$\alpha = \sqrt{\beta} \tag{8.1}$$

8.1.1   Subsection Heading Here

Write your subsection text here.

8.2   Conclusion

Write your conclusion here.

Chapter 9

Conclusions

9.1   Introduction

Here is the text of your introduction.

$$\alpha = \sqrt{\beta} \qquad\qquad (9.1)$$

9.1.1   Subsection Heading Here

Write your subsection text here.

9.2   Conclusion

Write your conclusion here.