# Lancaster University

# Title of your thesis

**First (Middle) Last name, BSc (Hons), MRes**

School of Computing and Communications

Lancaster University

I dedicate this thesis to someone. **(this is not required when submitting your thesis before your viva and you can add a dedication in your final thesis after your viva if you wish.)**

# Declaration

I declare that the work presented in this thesis is, to the best of my knowledge and belief, original and my own work. The material has not been submitted, either in whole or in part, for a degree at this, or any other university. This thesis does not exceed the maximum permitted word length of 80,000 words including appendices and footnotes, but excluding the bibliography. A rough estimate of the word count is: 465

First (Middle) Last name

**Title of your thesis**
First (Middle) Last name, BSc (Hons), MRes.
School of Computing and Communications, Lancaster University
A thesis submitted for the degree of *Doctor of Philosophy.* August, 2021.

# Abstract

This is the beginning of the abstract that according to the regulations should not be any longer than 300 words. See point 14 in appendix 2 of the regulations `https://bit.ly/2Q4H43I`.

# Publications

(This is an example taken from Andrew Moore's thesis, adapt this to suit your own thesis.)

**NOTE: If you have done joint research e.g. whereby you are not the first author and you feel you need to state the contributions you have made in those papers that relate to your thesis then create another section like 'Contribution Statements' whereby you state your contributions in those papers that relate to the thesis. See Kelly Widdicks thesis (page 11) for a great example. If you do create a 'Contribution Statements' section that you may want to revise the your 'Declaration', of which Kelly Widdicks declaration is a good example. Kelly's thesis link** `https://eprints.lancs.ac.uk/id/eprint/143606/1/2019widdicksphd.pdf`**. Also for more details on the regulations by the university on declaring contribution statements see point 18 in appendix 2 of** `https://bit.ly/2Q4H43I`

**ADDITIONAL NOTE: If you have any papers under review perhaps speak with your supervisor before adding them here for anonymity reasons.**

Only one publication, shown below, has been created directly from the thesis, from which large portions of this published work is used within chapter 3:

**Andrew Moore** and Paul Rayson (Aug. 2018). "Bringing replication and reproduction together with generalisability in NLP: Three reproduction studies for Target Dependent Sentiment Analysis". In: *Proceedings of the 27th International Conference on Computational Linguistics*. Santa Fe, New Mexico, USA: Association for Computational Linguistics, pp. 1132–1144. URL: `https://www.aclweb.org/anthology/C18-1097`

The following publication have been generated while developing this thesis, and to an extent has guided the thesis into what it has become:

Henry Moss, **Andrew Moore**, David Leslie, and Paul Rayson (July 2019). "FIESTA: Fast IdEntification of State-of-The-Art models using adaptive bandit algorithms". In: *Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics*. Florence, Italy: Association for Computational Linguistics, pp. 2920–2930. DOI: `10.18653/v1/P19-1281`

**Andrew Moore** and Paul Rayson (Aug. 2017). "Lancaster A at SemEval-2017 Task 5: Evaluation metrics matter: predicting sentiment from financial news headlines". In: *Proceedings of the 11th International Workshop on Semantic*

*Evaluation (SemEval-2017)*. Vancouver, Canada: Association for Computational Linguistics, pp. 581–585. DOI: `10.18653/v1/S17-2095`

Mahmoud El-Haj, Paul Rayson, Steve Young, **Andrew Moore**, Martin Walker, Thomas Schleicher, and Vasiliki Athanasakou (May 2016). "Learning Tone and Attribution for Financial Text Mining". In: *Proceedings of the Tenth International Conference on Language Resources and Evaluation (LREC'16)*. Portorož, Slovenia: European Language Resources Association (ELRA), pp. 1820–1825. URL: `https://www.aclweb.org/anthology/L16-1287`

**Andrew Moore**, Paul Edward Rayson, and Steven Eric Young (2016). "Domain adaptation using stock market prices to refine sentiment dictionaries". In: *Proceedings of the Emotion and Sentiment Analysis Workshop LREC 2016, Portorož, Slovenia*, pp. 63–66. URL: `http://gsi.dit.upm.es/esa2016/Proceedings-ESA2016.pdf`

# Acknowledgements

Acknowledgements you may want to make. (this is not required when submitting your thesis before your viva and you can add a dedication in your final thesis after your viva if you wish.)

# Contents

# List of Figures

# List of Tables

# Chapter 1

# Introduction

## 1.1   Section Name

Start of your introduction, with a reference to the relevant appendix A. Example of different citation styles (Moore and P. Rayson, 2018), and Moore and P. Rayson (2018). Example of a table 1.1:

$$
\begin{array}{c|c}
1 & 2 \\
3 & 4
\end{array}
$$

Table 1.1: A table

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit ligula feugiat magna. Nunc eleifend consequat lorem. Sed lacinia nulla vitae enim. Pellentesque tincidunt purus vel magna. Integer non enim. Praesent euismod nunc eu purus. Donec bibendum quam in tellus. Nullam cursus pulvinar lectus. Donec et mi. Nam vulputate metus eu enim. Vestibulum pellentesque felis eu massa.

Quisque ullamcorper placerat ipsum. Cras nibh. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. In hac habitasse platea dictumst. Integer tempus convallis augue. Etiam facilisis. Nunc elementum fermentum wisi. Aenean placerat. Ut imperdiet, enim sed gravida

sollicitudin, felis odio placerat quam, ac pulvinar elit purus eget enim. Nunc vitae tortor. Proin tempus nibh sit amet nisl. Vivamus quis tortor vitae risus porta vehicula.

Fusce mauris. Vestibulum luctus nibh at lectus. Sed bibendum, nulla a faucibus semper, leo velit ultricies tellus, ac venenatis arcu wisi vel nisl. Vestibulum diam. Aliquam pellentesque, augue quis sagittis posuere, turpis lacus congue quam, in hendrerit risus eros eget felis. Maecenas eget erat in sapien mattis porttitor. Vestibulum porttitor. Nulla facilisi. Sed a turpis eu lacus commodo facilisis. Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula libero dui cursus dui. Mauris tempor ligula sed lacus. Duis cursus enim ut augue. Cras ac magna. Cras nulla. Nulla egestas. Curabitur a leo. Quisque egestas wisi eget nunc. Nam feugiat lacus vel est. Curabitur consectetuer.

Suspendisse vel felis. Ut lorem lorem, interdum eu, tincidunt sit amet, laoreet vitae, arcu. Aenean faucibus pede eu ante. Praesent enim elit, rutrum at, molestie non, nonummy vel, nisl. Ut lectus eros, malesuada sit amet, fermentum eu, sodales cursus, magna. Donec eu purus. Quisque vehicula, urna sed ultricies auctor, pede lorem egestas dui, et convallis elit erat sed nulla. Donec luctus. Curabitur et nunc. Aliquam dolor odio, commodo pretium, ultricies non, pharetra in, velit. Integer arcu est, nonummy in, fermentum faucibus, egestas vel, odio.

Sed commodo posuere pede. Mauris ut est. Ut quis purus. Sed ac odio. Sed vehicula hendrerit sem. Duis non odio. Morbi ut dui. Sed accumsan risus eget odio. In hac habitasse platea dictumst. Pellentesque non elit. Fusce sed justo eu urna porta tincidunt. Mauris felis odio, sollicitudin sed, volutpat a, ornare ac, erat. Morbi quis dolor. Donec pellentesque, erat ac sagittis semper, nunc dui lobortis purus, quis congue purus metus ultricies tellus. Proin et quam. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos hymenaeos. Praesent sapien turpis, fermentum vel, eleifend faucibus, vehicula eu, lacus.

Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Donec odio elit, dictum in, hendrerit sit amet, egestas sed, leo. Praesent feugiat sapien aliquet odio. Integer vitae justo. Aliquam vestibulum fringilla lorem. Sed neque lectus, consectetuer at, consectetuer sed, eleifend ac, lectus. Nulla facilisi. Pellentesque eget lectus. Proin eu metus. Sed porttitor. In hac habitasse platea dictumst. Suspendisse eu lectus. Ut mi mi, lacinia sit amet, placerat et, mollis vitae, dui. Sed ante tellus, tristique ut, iaculis eu, malesuada ac, dui. Mauris nibh leo, facilisis non, adipiscing quis, ultrices a, dui.

Morbi luctus, wisi viverra faucibus pretium, nibh est placerat odio, nec commodo wisi enim eget quam. Quisque libero justo, consectetuer a, feugiat vitae, porttitor eu, libero. Suspendisse sed mauris vitae elit sollicitudin malesuada. Maecenas ultricies eros sit amet ante. Ut venenatis velit. Maecenas sed mi eget dui varius euismod. Phasellus aliquet volutpat odio. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia Curae; Pellentesque sit amet pede ac sem eleifend consectetuer. Nullam elementum, urna vel imperdiet sodales, elit ipsum pharetra ligula, ac pretium ante justo a nulla. Curabitur tristique arcu eu metus. Vestibulum lectus. Proin mauris. Proin eu nunc eu urna hendrerit

faucibus. Aliquam auctor, pede consequat laoreet varius, eros tellus scelerisque quam, pellentesque hendrerit ipsum dolor sed augue. Nulla nec lacus.

Suspendisse vitae elit. Aliquam arcu neque, ornare in, ullamcorper quis, commodo eu, libero. Fusce sagittis erat at erat tristique mollis. Maecenas sapien libero, molestie et, lobortis in, sodales eget, dui. Morbi ultrices rutrum lorem. Nam elementum ullamcorper leo. Morbi dui. Aliquam sagittis. Nunc placerat. Pellentesque tristique sodales est. Maecenas imperdiet lacinia velit. Cras non urna. Morbi eros pede, suscipit ac, varius vel, egestas non, eros. Praesent malesuada, diam id pretium elementum, eros sem dictum tortor, vel consectetuer odio sem sed wisi.

# Chapter 2

# Middle chapters

Middle.

# Chapter 3

# Conclusions

## 3.1  Introduction

Example of a figure 3.1:



Figure 3.1:  UCREL logo.

# Appendix A

# Introduction

## A.1    Additional Tables

Some extra tables A.1 that should go in the appendix.

| 5 | 6 |
|---|---|
| 7 | 8 |

Table A.1: Caption

# References

El-Haj, Mahmoud et al. (May 2016). "Learning Tone and Attribution for Financial Text Mining". In: *Proceedings of the Tenth International Conference on Language Resources and Evaluation (LREC'16)*. Portorož, Slovenia: European Language Resources Association (ELRA), pp. 1820–1825. URL: https://www.aclweb.org/anthology/L16-1287.

Moore, Andrew and Paul Rayson (Aug. 2017). "Lancaster A at SemEval-2017 Task 5: Evaluation metrics matter: predicting sentiment from financial news headlines". In: *Proceedings of the 11th International Workshop on Semantic Evaluation (SemEval-2017)*. Vancouver, Canada: Association for Computational Linguistics, pp. 581–585. DOI: 10.18653/v1/S17-2095.

— (Aug. 2018). "Bringing replication and reproduction together with generalisability in NLP: Three reproduction studies for Target Dependent Sentiment Analysis". In: *Proceedings of the 27th International Conference on Computational Linguistics*. Santa Fe, New Mexico, USA: Association for Computational Linguistics, pp. 1132–1144. URL: https://www.aclweb.org/anthology/C18-1097.

Moore, Andrew, Paul Edward Rayson, and Steven Eric Young (2016). "Domain adaptation using stock market prices to refine sentiment dictionaries". In: *Proceedings of the Emotion and Sentiment Analysis Workshop LREC 2016, Portorož, Slovenia*, pp. 63–66. URL: http://gsi.dit.upm.es/esa2016/Proceedings-ESA2016.pdf.

Moss, Henry et al. (July 2019). "FIESTA: Fast IdEntification of State-of-The-Art models using adaptive bandit algorithms". In: *Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics*. Florence, Italy: Association for Computational Linguistics, pp. 2920–2930. DOI: 10.18653/v1/P19-1281.