[Resources to help use this Word template to create your thesis can be found at:

[Training in using Word to create a thesis](https://www.southampton.ac.uk/doctoral-college/professional-development-programme/about-the-programme/knowledge-and-techniques-for-research/using-it-software/text-word.page)

Web pages

<http://go.soton.ac.uk/thesispc>

or

<http://go.soton.ac.uk/thesismac>]

**UNIVERSITY OF SOUTHAMPTON**

FACULTY OF [YOUR\_FACULTY (in capitals)]

[Academic\_Unit (underlined)]

Volume [X] of [Y]

[Thesis\_Title (bold)]

by

**[Your\_Name (bold)]**

Thesis for the degree of [name of degree]

[Month\_Year]

**UNIVERSITY OF SOUTHAMPTON**

**ABSTRACT**

FACULTY OF [YOUR\_FACULTY (in capitals)]

[Discipline (underlined)]

Thesis for the degree of [Doctor of Philosophy\_or\_something]

**[THESIS\_TITLE (bold and in capitals)]**

[Your\_Full\_Name e.g. Arthur Francis Jones]

Table of Contents

[Table of Contents iii](#_Toc498004668)

[Table of Tables iii](#_Toc498004669)

[Table of Figures iii](#_Toc498004670)

[List of Accompanying Materials iii](#_Toc498004671)

[Academic Thesis: Declaration Of Authorship iii](#_Toc498004672)

[Acknowledgements iii](#_Toc498004673)

[Definitions and Abbreviations iii](#_Toc498004674)

[Chapter 1 Use the style Heading 1 for chapter titles. There is numbering attached so only use it for chapter titles 3](#_Toc498004675)

[1.1 Use the style Heading 2 for subheadings. This style has numbering attached 3](#_Toc498004676)

[1.1.1 Use the style Heading 3 for the next level of headings. This style has numbering attached. 3](#_Toc498004677)

[1.2 Images 3](#_Toc498004678)

[1.3 Tables 3](#_Toc498004679)

[Chapter 2 Working efficiently 3](#_Toc498004680)

[2.1 Learn useful ways to work with your file 3](#_Toc498004681)

[Chapter 3 A new chapter 3](#_Toc498004682)

[3.1 Adding new sections 3](#_Toc498004683)

[3.2 Cross-referencing 3](#_Toc498004684)

[Chapter 4 Reviewing tools 3](#_Toc498004685)

[4.1 Track changes 3](#_Toc498004686)

[4.2 Spell checker and auto-correct 3](#_Toc498004687)

[Chapter 5 Chapter 5 awaits content 3](#_Toc498004688)

[5.1 Chapter 5 subheading 3](#_Toc498004689)

[Chapter 6 Finishing 3](#_Toc498004690)

[6.1 Printing and PDFs 3](#_Toc498004691)

[Appendix A Your first appendix 3](#_Toc498004692)

[Appendix B Your second appendix 3](#_Toc498004693)

[Glossary of Terms 3](#_Toc498004694)

[List of References 3](#_Toc498004695)

[Bibliography 3](#_Toc498004696)

Table of Tables

Table of Figures

[Figure 1 The Clipboard group in Word 2010 3](#_Toc498004497)

List of Accompanying Materials

Academic Thesis: Declaration Of Authorship

I, [please print name]

declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

[title of thesis]

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. [Delete as appropriate] None of this work has been published before submission [or] Parts of this work have been published as: [please list references below]:

Signed:

Date:

Acknowledgements

Definitions and Abbreviations

# Use the style Heading 1 for chapter titles. There is numbering attached so only use it for chapter titles

## Use the style Heading 2 for subheadings. This style has numbering attached

### Use the style Heading 3 for the next level of headings. This style has numbering attached.

Learn about [using Styles](https://guides.soton.ac.uk/uni/isolutions/lg-office-2013/start/default.htm?7BD2F0D5-EEDA-4431-9C2F-9EF58724B150) to create a well formatted document and get a Table of Contents created by Word based on the Headings you include.

Use the style Normal for your standard paragraphs.

Use the style Quotation for large quotes. This style has indents on the left and right hand side and a slightly larger spacing before them to make them stand out.

Use the style Quotation\_Attribution to show the source of the quote

If you wish to change the default font used throughout the file see [Change the default font](https://guides.soton.ac.uk/uni/isolutions/lg-office-2013/start/default.htm?19F15C7B-1CC4-4F98-96BF-D6EA1DAF8A09)

## Images

[Insert images](https://guides.soton.ac.uk/uni/isolutions/lg-office-2013/start/default.htm?866F12E1-A2EC-4177-AD89-D19949D12186) in their own paragraph of Normal formatted text and ‘In line with text’. Images should have a [Caption](https://guides.soton.ac.uk/uni/isolutions/lg-office-2013/start/default.htm?8B3C0228-F863-4A37-9F68-1CEB3D86375E) inserted

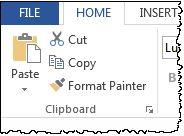


Figure The Clipboard group in Word 2010

## Tables

[Tables](https://guides.soton.ac.uk/uni/isolutions/lg-office-2013/start/default.htm?A9CFD92F-2CD9-4526-8B18-3EE00583BA35) should have a caption and long tables can be made to repeat their title row on multiple pages

# Working efficiently

## Learn useful ways to work with your file

There are lots of time saving ways to speed up working with your file:

[The Navigation Pane](https://guides.soton.ac.uk/uni/isolutions/lg-office-2013/start/default.htm?922E5D68-7B22-45D7-B58E-7F0BB82EF6BB)

[Browsing and selecting](https://guides.soton.ac.uk/uni/isolutions/lg-office-2013/start/default.htm?F333358B-B64A-4468-8A94-D662612DC58F)

[Keyboard shortcuts](https://guides.soton.ac.uk/uni/isolutions/lg-office-2013/start/default.htm?D790044D-A346-4664-8CB7-705C0257124A)

# A new chapter

## Adding new sections

The template has 6 chapters and 2 appendices. Find out how to use [Page Layout](https://guides.soton.ac.uk/uni/isolutions/lg-office-2013/start/default.htm?A3C076D6-ADAA-44C5-AC9F-C8CFF551A08F) features to add

* New chapters
* New appendices
* Landscaped sections

## Cross-referencing

If you use the heading styles then [cross-referencing](https://guides.soton.ac.uk/uni/isolutions/lg-office-2013/start/default.htm?257D2144-3CC1-47D0-BE3B-BE1A0888BFBB) to a heading elsewhere is made very easy

# Reviewing tools

## Track changes

Word has useful tools that will allow you to [track changes](https://guides.soton.ac.uk/uni/isolutions/lg-office-2013/start/default.htm?2167815B-C3D2-4C5A-8BC1-8020A1520D7A) that you might want to make to the file.

## Spell checker and auto-correct

Word has features that will help [check your spelling](https://guides.soton.ac.uk/uni/isolutions/lg-office-2013/start/default.htm?8DF05004-D415-4320-92B4-24FB460DA31C) – find out how to add words to its dictionary so it can recognise technical terminology that you use.

# Chapter 5 awaits content

## Chapter 5 subheading

# Finishing

## Printing and PDFs

There’s even advice on ways to improve you [printing](https://guides.soton.ac.uk/uni/isolutions/lg-office-2013/start/default.htm?B3BA6016-BA29-4074-8750-ED984008519A) experience and the [PDF](https://guides.soton.ac.uk/uni/isolutions/lg-office-2013/start/default.htm?DE05446D-6E1B-4D7B-9574-4CFF1053550B) version of your file.

# Conclusion and Future Work

## Conclusion

This paper is the first study of differentiating from velocity and acceleration in computer images. To understand the motion in the images even more completely, we decomposed acceleration along radial and tangential directions because radial component changes the direction of velocity and tangential component changes the magnitude.

According to the motion feature of heel strike, we use radial acceleration for gait analysis. The change of foot motion status at the instant of heel strike leads to large acceleration in leading foot area. The amount of acceleration arising at heel strike frames give us a conspicuous clue to disambiguating the key frames from the others and the position of heel strike can be estimated by the circle centre of radial components. The leading detection rates are 95.2% in SOTON Large Database and 94.8% OU-ISIR Gait Database separately.

Our method also shows a good robustness in performance analysis with respect to noise, occlusion and reduced resolution. Our new approach to acceleration detection and analysis is actually generic and we show that it might have capability to detect acts of violence and we look forward to generalising this capability further.

## Future Work

### Violent crime analysis using acceleration detection

Acceleration can also be used as an approach to detect crimes or violence in videos, for example: fighting. When people fight, their body tends to have large acceleration (in many places and with large values) on their body because their arms swing and their feet are kicking. We compare the detected acceleration with the optical flow. Figure 10 shows single images from the acceleration detection results of the surveillance of two episodes in a prison environment. In the left episode there is no fighting and the scene is mundane; in the right a prisoner assaults a guard. In the left episode there is little acceleration detected revealing only the swinging arm of a guard. In comparison there is more optical flow, consistent with more leisurely movement as prisoners receive their visitors. In contrast for the right episode there is considerable detected acceleration in the assault and much less optical flow. When the crimers flee after crime, their body also tends to make more acceleration. As such acceleration appears more suited to the detection of rapid change, consistent with scenes of violence. Thus by detecting acceleration we might be able to determine an approach suited to the detection of violent crime in the future.

|  |  |
| --- | --- |
| ../Desktop/ICDP2016/flow_velocity-478_meitu_3.jpg | ../Desktop/ICDP2016/flow_velocity-36_meitu_2.jpg |
| (a) Detecting optical flow | |
| ../Desktop/ICDP2016/flow_radial-478_meitu_1.jpg | ../Desktop/flow_resultant-36.png |
| (b) Detecting acceleration | |
| Figure 10: Detecting acceleration and optical flow in an act of violence and in a more relaxed scene.[[1]](#footnote-1) | |

### Scene Segmentation

1. Your first appendix
2. Your second appendix

Glossary of Terms

List of References

Bibliography

1. Video is taken from <https://www.youtube.com/watch?v=RzxS72eCm6c> [↑](#footnote-ref-1)