University of Nottingham
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# Thesis Title

Thesis submitted to the University of Nottingham for the degree of **Doctor of Philosophy, July 2020.**


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# Abstract

Thesis abstract here.

# Acknowledgements

Your acknowledgement here.

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# Abbreviations

**AR** Augmented Reality.

**HVAR** Hybrid Virtual and Augmented Reality.

**VR** Virtual Reality.

# Chapter 1

# Introduction

Introduction chapter, giving an overview of Virtual Reality (VR), Augmented Reality (AR) and Hybrid Virtual and Augmented Reality (HVAR).

## 1.1 Section 1

## 1.2 Section 2

## 1.3 Section 3

# Chapter 2

# Literature Review

Literature review chapter.

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## 2.1 Section 1

How to write a thesis (see Murray, 2011).

## 2.2 Section 2

## 2.3 Section 3

# Chapter 3

# Methodology

Methodology chapter.

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## 3.1 Section 1

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# Chapter 4

# Main Chapter

Main chapter. This can be duplicated several times.

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## 4.1 Figures

Example figure (see Figure 4.1).

### 4.1.1 Single figure

Figure 4.1: Nottingham Logo.

### 4.1.2 Figures with sub captions

(a) Caption A.

(b) Caption B.

Figure 4.2: Nottingham Logo.

### 4.1.3 Figures side by side

Figure 4.3: Caption C.

Figure 4.4: Caption D.

## 4.2 Tables

Example table (see Table 4.1).

Table 4.1: Table caption.

| Col 1 | Col 2 | Col 3 |
|---|---|---|
| **A** | 1 | 5 |
| **B** | 2 | 6 |
| **C** | 3 | 7 |
| **D** | 4 | 8 |

## 4.3 Lists

### 4.3.1 Numbered list

#### Enumeration

1. First item.
2. Second item.
3. Third item.

#### Research questions

**RQ1.** First research question?

**RQ2.** Second research question?

**RQ3.** Third research question?

#### Hypothesis

**H1.** First hypothesis.

**H2.** Second hypothesis.

**H3.** Third hypothesis.

### 4.3.2 Itemised list

- First item.
- Second item.
- Third item.

## 4.4 Equations

$$CR = \frac{(\sum_{i=1}^{n} \lambda_i)^2}{(\sum_{i=1}^{n} \lambda_i)^2 + (\sum_{i=1}^{n} \delta_i)} \tag{4.1}$$

$$AVE = \frac{\sum_{i=1}^{n} \lambda_i^2}{n} \tag{4.2}$$

$$CA = \frac{n}{n-1}(1 - \frac{\sum_{i=1}^{n} V_i}{V_t}) \tag{4.3}$$

# Chapter 5

# Conclusions

Conclusion chapter.

## 5.1 Section 1

## 5.2 Section 2

## 5.3 Section 3

# Bibliography

Murray, R. (2011). *How to write a thesis.* McGraw-Hill Education (UK).

# Appendices

# Appendix A

# Research Ethics

# Appendix B

# Experimental Procedure

# Appendix C

# Questionnaires

## C.1 User Experience Questionnaire

**Please make your evaluation now.**

For the assessment of the product, please fill out the following questionnaire. The questionnaire consists of pairs of contrasting attributes that may apply to the product. The circles between the attributes represent gradations between the opposites. You can express your agreement with the attributes by ticking the circle that most closely reflects your impression.

Example:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| attractive | ○ | ⊗ | ○ | ○ | ○ | ○ | ○ | unattractive |

This response would mean that you rate the application as more attractive than unattractive.

Please decide spontaneously. Don't think too long about your decision to make sure that you convey your original impression.

Sometimes you may not be completely sure about your agreement with a particular attribute or you may find that the attribute does not apply completely to the particular product. Nevertheless, please tick a circle in every line.

It is your personal opinion that counts. Please remember: there is no wrong or right answer!

Please assess the product now by ticking one circle per line.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
|---|---|---|---|---|---|---|---|---|---|
| annoying | ○ | ○ | ○ | ○ | ○ | ○ | ○ | enjoyable | 1 |
| not understandable | ○ | ○ | ○ | ○ | ○ | ○ | ○ | understandable | 2 |
| creative | ○ | ○ | ○ | ○ | ○ | ○ | ○ | dull | 3 |
| easy to learn | ○ | ○ | ○ | ○ | ○ | ○ | ○ | difficult to learn | 4 |
| valuable | ○ | ○ | ○ | ○ | ○ | ○ | ○ | inferior | 5 |
| boring | ○ | ○ | ○ | ○ | ○ | ○ | ○ | exciting | 6 |
| not interesting | ○ | ○ | ○ | ○ | ○ | ○ | ○ | interesting | 7 |
| unpredictable | ○ | ○ | ○ | ○ | ○ | ○ | ○ | predictable | 8 |
| fast | ○ | ○ | ○ | ○ | ○ | ○ | ○ | slow | 9 |
| inventive | ○ | ○ | ○ | ○ | ○ | ○ | ○ | conventional | 10 |
| obstructive | ○ | ○ | ○ | ○ | ○ | ○ | ○ | supportive | 11 |
| good | ○ | ○ | ○ | ○ | ○ | ○ | ○ | bad | 12 |
| complicated | ○ | ○ | ○ | ○ | ○ | ○ | ○ | easy | 13 |
| unlikable | ○ | ○ | ○ | ○ | ○ | ○ | ○ | pleasing | 14 |
| usual | ○ | ○ | ○ | ○ | ○ | ○ | ○ | leading edge | 15 |
| unpleasant | ○ | ○ | ○ | ○ | ○ | ○ | ○ | pleasant | 16 |
| secure | ○ | ○ | ○ | ○ | ○ | ○ | ○ | not secure | 17 |
| motivating | ○ | ○ | ○ | ○ | ○ | ○ | ○ | demotivating | 18 |
| meets expectations | ○ | ○ | ○ | ○ | ○ | ○ | ○ | does not meet expectations | 19 |
| inefficient | ○ | ○ | ○ | ○ | ○ | ○ | ○ | efficient | 20 |
| clear | ○ | ○ | ○ | ○ | ○ | ○ | ○ | confusing | 21 |
| impractical | ○ | ○ | ○ | ○ | ○ | ○ | ○ | practical | 22 |
| organized | ○ | ○ | ○ | ○ | ○ | ○ | ○ | cluttered | 23 |
| attractive | ○ | ○ | ○ | ○ | ○ | ○ | ○ | unattractive | 24 |
| friendly | ○ | ○ | ○ | ○ | ○ | ○ | ○ | unfriendly | 25 |
| conservative | ○ | ○ | ○ | ○ | ○ | ○ | ○ | innovative | 26 |