Live Coding for Visual Understanding [working title]

Arrian Purcell

A subthesis submitted in partial fulfillment of the degree of
Bachelor of Software Engineering (Honours) at
The Department of Computer Science
Australian National University

March 2014

© Arrian Purcell

Typeset in Palatino by TEX and LATEX 2ε.

Except where otherwise indicated, this thesis is my own original work.

Arrian Purcell
3 March 2014

To fluffy the cat.

Acknowledgements

Here is where you thank the people who helped you along the way…

Abstract

Live coding is a method of performance that presents audio and visual content to audiences through programming. Often ”showing the code” is a fundamental part of the performance in order to retain the attention of the audience and provide a measure of authenticity.

Currently missing within the research within live coding is a visualisation of the code that represents the artists intent. Previous visualisation techniques present an abstract and often disjoint representation from the associated code. Missing within this context is a formal analysis of how to best represent the artist's intent visually and a formal analysis of the target audience.

Contents

Acknowledgements **vii**

Abstract **ix**

1 Introduction **1**
1.1 Background . . . 1
1.2 Theoretical Framework . . . 1

2 Literature Review **3**
2.1 Taxonomy . . . 3
2.2 Visual Performance . . . 3
2.3 Live Coding . . . 3
2.4 Code Comprehension . . . 3

3 Survey **5**
3.1 Rationale . . . 5
3.2 Procedure . . . 5
3.2.1 Live Coder Survey . . . 5
3.2.2 Audience Survey . . . 5
3.3 Results . . . 5

4 Visualisation Experiment 1 **7**
4.1 Rationale . . . 7
4.2 Procedure . . . 7
4.3 Results . . . 7

5 Visualisation Experiment 2 **9**
5.1 Rationale . . . 9
5.2 Procedure . . . 9
5.3 Results . . . 9

6 Conclusion **11**

A Survey Results **13**

B Visualisations **15**

Chapter 1

Introduction

1.1 Background

1.2 Theoretical Framework

Chapter 2

Literature Review

2.1 Taxonomy

2.2 Visual Performance

2.3 Live Coding

2.4 Code Comprehension

Chapter 3

Survey

3.1 Rationale

3.2 Procedure

3.2.1 Live Coder Survey

3.2.2 Audience Survey

3.3 Results

Chapter 4

Visualisation Experiment 1

4.1 Rationale

4.2 Procedure

4.3 Results

Chapter 5

Visualisation Experiment 2

5.1 Rationale

5.2 Procedure

5.3 Results

Chapter 6

Conclusion

Appendix A

Survey Results

Appendix B

Visualisations