# 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  $2_{\mathcal{E}}$ .

Except where otherwise indicated, this thesis is my own original work. Arrian Purcell 3 March 2014



# 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**

A	cknowledgements	vii					
Al	bstract	ix					
1	Introduction 1.1 Background	<b>1</b> . 1					
	1.2 Theoretical Framework						
2	Literature Review						
	2.1 Visual Performance	. 3					
	2.2 Code Comprehension	. 3					
3	Survey	5					
	3.1 Rationale	. 5					
	3.2 Procedure						
	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						

xii Contents

#### Introduction

- 1.1 Background
- 1.2 Theoretical Framework

#### **Literature Review**

- 2.1 Visual Performance
- 2.2 Code Comprehension

## Survey

- 3.1 Rationale
- 3.2 Procedure
- 3.2.1 Live Coder Survey
- 3.2.2 Audience Survey
- 3.3 Results

Survey

6

# **Visualisation Experiment 1**

- 4.1 Rationale
- 4.2 Procedure
- 4.3 Results

# **Visualisation Experiment 2**

- 5.1 Rationale
- 5.2 Procedure
- 5.3 Results

## Conclusion

12

# **Survey Results**

## Visualisations