

# **Live Coding for Visual Understanding**

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

Arrian Purcell  
10 March 2014



To fluffy the cat.



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# Acknowledgements

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





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# Abstract

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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.

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# Introduction

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## 1.1 Background

## 1.2 Theoretical Framework



# Literature Review

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## 2.1 Live Coding

(focus on developing a narrative concerning what needs to be done within live coding to achieve the software engineering goals and what needs to be done to develop successful visualisations within the field of live coding)

Live coding describes the process of exposing the programming process to a live audience. -talk more about what live coding is

Live coding history... . -talk more about history of live coding

There exists much discussion within the live coding research body (eg. ...) about the potential for live visual manipulation and examination of the current progress within the field to achieve this.

### 2.1.1 Music vs Visualisation

In addition, there has been a move towards manipulation of the visuals in synchronisation with the ....

## 2.2 Music Visualisation

### 2.2.1 Taxonomy

### 2.2.2 Live Performance

## 2.3 Software Engineering Practice

As the field of live coding develops, the relevance of both the application of software engineering practice to the field and the relevance of live coding to the field of software engineering has become highly apparent...

### **2.3.1 Application of Software Engineering to Live Coding**

The application of software engineering to live coding... ([Blackwell and Collins 2005] paper incl. requirements analysis, design, coding, project management, reuse, debugging, documentation, comprehension and maintenance)

#### **2.3.1.1 Design**

Design...

#### **2.3.1.2 Coding**

Coding...

#### **2.3.1.3 Comprehension**

Comprehension...

### **2.3.2 Application of Live Coding to Software Engineering**

The application of live coding to software engineering...

#### **2.3.2.1 Dissemination of Code Understanding**

#### **2.3.2.2 Multidisciplinary Cohesion**

#### **2.3.2.3 Visualisation Framework**



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# Survey

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## 3.1 Rationale

## 3.2 Procedure

## 3.3 Results



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# Visualisation Experiment 1

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## 4.1 Rationale

## 4.2 Procedure

## 4.3 Results



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# Visualisation Experiment 2

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## 5.1 Rationale

## 5.2 Procedure

## 5.3 Results



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# Conclusion

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# Survey Results

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# Visualisations

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