

Automatic Protoboard Layout

by

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B.S. EECS, Massachusetts Institute of Technology (2013)

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Submitted to the Department of Electrical Engineering and Computer
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Abstract

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Thesis Supervisor: Dennis M. Freeman

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Acknowledgments

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Chapter 1

Introduction

1.1 Problem Statement

What problem are we solving?

1.2 Motivation

Why is this an interesting problem?

1.3 Goal

Precisely state the goal of this project. In particular, explain that we ultimately want to make a teaching tool for 6.01.

1.4 Outline

How is the Thesis organized?

Chapter 2

Background

2.1 Technical Background

What is a circuit schematic? What is a protoboard? What circuit components are we working with in this project?

2.2 Previous Work

2.2.1 Current tools in 6.01

Discuss CMax and its capabilities.

2.2.2 Current work in automatic protoboard layout

What similar work has been done before?

Chapter 3

Evaluation

How are we going to evaluate a particular solution to the problem?

Chapter 4

Methods

How did we solve the problem? Two step process: placement then wiring.

4.1 Circuit Component Placement

How do you place the components on the protoboard? Explore various possibilities.

4.2 Wiring

Once the components are placed, how do you wire them together? Explore various possibilities.

Chapter 5

Results

Quantitatively compare the various methods discussed in the previous section.

Chapter 6

Discussion

6.1 Explaining the Results

Give plausible explanation for the observed results.

6.2 Remarks

Why are these results encouraging? What are their implications? Relate back to Introduction to Thesis. What could have been done differently?

Appendix A

Schematic Drawing GUI

Discuss the features and capabilities of the GUI.