

Chessbot Manual

Omar Hasan

June 5, 2015

Preface

The purpose of this document is to both instruct the user on how to operate the Chessbot as well as inform them about its various quirks. At the time of this document's writing, the repository that contains the source code for the Chessbot's processor as well as for the Java app that is used to control it can be found on our **github organization**. Should the link to the repo change, one might be able to find it by searching github for an organization named "utdrobotchess".

If you find anything wrong with this document and you know LaTeX, feel free to correct it. And finally, if you have any questions or concerns, feel free to contact our mentor Dr. Nicholas Gans (ngans@utdallas.edu).

You can also try to contact one of the team members:

Omar Hasan	omarhasan777@gmail.com
Abhi Chennapareddy	ch.abhinav.reddy@gmail.com



Figure 1: The Chessbot at the Robot Chess Lab

Contents

Preface	1
1 System Design Overview	3
1.1 Mechanical Design Overview	3
1.1.1 Velocity Kinematics	3
1.2 Electrical Design Overview	3
1.3 Software Design Overview	3
2 Mechanical Components	4
2.1 Chassis	4
2.2 Assembly	4
3 Electrical Components	5
3.1 ATmega2560	5
4 Software Components	6
4.1 Network Communication	6
4.1.1 Message Formats	6
5 Future Work	7
6 Troubleshooting	8
6.1 Mechanical Issues	8
6.2 Electrical Issues	8
6.3 Software Issues	8

Chapter 1

System Design Overview

1.1 Mechanical Design Overview

1.1.1 Velocity Kinematics

1.2 Electrical Design Overview

1.3 Software Design Overview

Chapter 2

Mechanical Components

2.1 Chassis

2.2 Assembly

Chapter 3

Electrical Components

3.1 ATmega2560

Chapter 4

Software Components

4.1 Network Communication

4.1.1 Message Formats

Chapter 5

Future Work

Chapter 6

Troubleshooting

6.1 Mechanical Issues

6.2 Electrical Issues

6.3 Software Issues