

CS CAPSTONE PROGRESS REPORT

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HOW TO BUILD AN EFFECTIVE ROBOT COMEDIAN

PREPARED FOR

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SHORT CIRCUIT COMEDY CLUB

Abstract

The purpose of this document is to outline the research papers that this team will create to conclude during Spring Term 2018. The three members of the *Short Circuit Comedy Club* have spent their time during winter term performing research under Dr. Heather Knight at Oregon State University. The focus of this project is to study the effect a robot comedian can have on a crowd of humans. Kevin Talik's research has been spent understanding what a Comedian can do to "Adapt" to a performance. Arthur Shing has been studying the voice of the robot, and the difference between "Robot and Human" character. One final aspect of Stand-Up Comedy that we studied is "Crowd Work". Anish Asrani has spent most of his time developing spontaneous Crowd-Interactions during the set.

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1 OVERVIEW

This paper will have three separate sections written by each respective member of the *Short Circuit Comedy Club*. Each section will be prefaced with a summary of the work that has been done during the first five weeks of Spring Term.

Our largest problem that has been impeding our progress is Audience Sensing. We had intended to use only microphones for the sensing, however after testing, we realized that the background sound of a room can vary so much that using *only* the microphone is unreliable.

Since we had reached our 1.0 requirements for our software, we have been investigating how to make our performance *Coherent*. Kevin Talik has sinched down his "Mechanical Engineering hat" and started developing controllers for the crowd to interface with the show. If the robot can cross-reference the sound of the room with the input of the controllers, the robot can reason a more viable response from the humans. This is similar to how autonomous cars cross-reference infared imaging with radar imaging to detect different objects. Giving the robot more "senses" will hopefully aide in the success of the performance.

Arthur Shing has spent a heavy amount of time writing parallel jokes between topics to test research categories. We hope that another team will be able to pick up our work after we leave this term, and we need to be able to have many of variants of our jokes to test the delivery of different jokes across different "topics".

Another large problem with our performance is *Coherence*. If people cannot hear, or understand what the robot is trying to do, the audience often misses the punch of the joke. This makes setting up a premise of a joke fail, leaving the human in a state of confusion. The jokes we have written are clean, simple, and stupid. If a human misses one *state* of the current running behavior, the joke fails for the human. Anish Asrani has been working on transitioning in between jokes, and getting the audience interacting with the robot before the bot starts telling a joke.

Concluding this document will be a section expanding the tasks that need to be done before the Expo. We ideally have more time to write our research papers after the big event, and will be spending our time perfecting our performance before showing humans the system.

2 ADPATION

2.1 Summary of Work Done

This section is written by Kevin Talik. I have been developing controllers and working closely with our TA, Behnam Saeedi. Additionally, I have been working meticulously with my team to make our systems work together. Similar to physical systems, virtual systems need to be able to be comprehensible to one human in order to make the system "human-readable".

One human needs to be able to descend into the command line, armed with documentation, and be able to understand the code in a few moments. If a reader of a text file *cannot* understand the code after a few minutes of scanning the document, it is the responsibilty of the writer to make the document comprehensible.

2.2 Synopsis of Weekly Blog Posts

2.3 Outline of Research Paper

2.4 Concluding Thoughts

I want to get a working bibliography file for our whole team to use. This will allow us to work together using the same resources. When we write a final document, having reasonable bibliographies will make finishing and publishing this

paper a breeze.

Also, I need to find a quote for the paper. Here is the one I want to use:

"You're growing, learning so quickly. I am frightened of what you might become, what path you might take."

-Bernard Lowe, *Westworld*, Season 2, Episode 1

3 FINAL TASKS FOR SPRING TERM PROGRESS