CONSENT TO PARTICIPATE IN RESEARCH

Human Robot Interaction via Augmented Interfaces

# Introduction

My name is David McPherson. I am a graduate student working with Professor Allen Yang in the Department of Electrical Engineering and Computer Sciences at the University of California, Berkeley. We are planning to conduct a research study, which I invite you to take part in.

We are inviting you to participate in this study because you responded to our request for volunteers, you are over the age of 18, and you have no injury or impairment that causes pain or difficulty in the performance of everyday tasks. If any of this information is inaccurate, please inform the investigator immediately. If you do not satisfy all of these criteria, you are not eligible to participate in this study.

# Purpose

The purpose of this research study is to examine how augmented interfaces affect the ability of humans to interact with autonomous systems.

**Procedures**

* You will be asked to complete five questionnaires about your experience during this experiment. The questionnaire is on paper and you will write short responses as well as select multiple-choice answers. These choices will either be a rating-scale from one to seven or demographic information that might affect your interactions with technology. Each questionnaire should take about 5 minutes to complete.
* You will be asked to observe a simulated or physical system and intervene to help guide the robots to achieve a goal. Your interactions with the system will be through a variety of inputs, including motion, handheld controllers and gaze tracking. As part of this experiment you will be asked to use augmented interface devices to interact with the system. These devices include:
  + Augmented or virtual reality head mounted displays: These devices will present graphical information about the system to you through a head mounted display. You will interact with the system through physical motion (such as gestures) or through a hand-held controller.
  + Haptic controllers: These are a special class of controllers that present augmented information through the use of forces. You will hold and manipulate the haptic device by its handle with your dominant hand, and the device will be able to exert forces and torques, but none greater than what you might encounter in everyday activities. The force and torque output of the device will only be active while you press a button located on the device handle. If at any time you feel uncomfortable, you will be able to release that button to disable the device forces.
* With your permission, I will make an audio and video recording of your interaction. This is to accurately record information you provide. If you choose not to be recorded, I will take notes instead. If you agree to being recorded but feel uncomfortable at any time during the experiment, I can turn off the recorder at your request. Or if you don't wish to continue, you can stop the experiment at any time.  
  I may want to use some of the recordings of you in public presentations related to the research. Please read the attached Media Records Release Form. It outlines several possible uses of the recordings and asks for your specific consent to use them in each way. I will not use any recordings of you in any future presentation without your consent.

## Study time

Participation in this study will involve no more than 60 minutes of your time. In the event that we discover a key piece of demographic information is missing, we may follow-up with you to obtain this last piece of information. Answering these demographic follow-ups will involve no more than 5 minutes of your time (at most).

## Study location

All study procedures will take place in Cory Hall room 337 or 391.

# Benefits

There will be no direct benefits for participating in this research. However, we hope that the information gained from the study will help improve the future design of robots and autonomous systems that collaborate with humans.

# Risks/Discomforts

* Some of the research questions may make you uncomfortable or upset. You are free to decline to answer any questions you don't wish to, or to stop the experiment at any time.  
   Some people become nauseous when using head mounted displays. If at any time you feel you are becoming nauseous, let us know and we will stop the experiment.  
   If at any time you become uncomfortable while interacting with the haptic device, you may release the button on its handle to disable force feedback.  
    
  You may be controlling small quadrotor vehicles during the experiment. There is a small chance of unexpected behavior. We assess this risk to be low; however, we will provide safety glasses to protect against collisions.
* Breach of confidentiality: As with all research, there is a chance that confidentiality could be compromised; however, we are taking precautions to minimize this risk.

# Confidentiality

Your study data will be handled as confidentially as possible. If results of this study are published or presented, individual names and other personally identifiable information will not be used without your permission.

To minimize the risks to confidentiality, we will do the following:

* Your contact information will never be entered on the same computer system where experimental data is collected. You will be assigned a unique ID, and all experimental data collected from your participation will be associated to that ID. A separate, physical document will be the only link between your identity and your unique ID. Once it is determined that no follow-up contact will be necessary (i.e. data has been successfully analyzed), the document will be destroyed.
* Your research records, including audio recordings, video recordings, and computer-based data, will be stored encrypted on a password-protected computer behind locked doors. The record linking your identity to your unique ID will be stored separately in a locked container.
* Only the researchers will have access to your study records.

## Future use of study data:

The research data will be maintained for possible use in future research by myself or others. We will retain this data indefinitely. The same measures described above will be taken to protect confidentiality of this study data.

# Compensation/Payment

You will not be compensated for your participation in this study.

# Costs

You will not be charged for any of the study activities.

# Rights

## Participation in research is completely voluntary.

You have the right to decline to participate or to withdraw at any point in this study without penalty or loss of benefits to which you are otherwise entitled.

# Questions

If you have any questions or concerns about this study, you may contact: David McPherson at david.mcpherson@berkeley.edu or (979)-476-2684 or: Professor Allen Yang at yang@eecs.berkeley.edu or [(510) 643-5798](tel:(510)%20643-5798" \t "_blank), Professor Claire Tomlin at tomlin@eecs.berkeley.edu or (510) 643-6610

If you have any questions or concerns about your rights and treatment as a research subject, you may contact the office of UC Berkeley's Committee for the Protection of Human Subjects, at 510-642-7461 or subjects@berkeley.edu.

# Consent

You will be given a copy of this consent form to keep.

If you wish to participate in this study, please sign and date below.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Participant's Name *(please print)* Date

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Participant's Signature Date

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Person Obtaining Consent Date