

## APPENDIX

### Questionnaire Sample Unfilled form:

5/19/2021

NAO-for shopping Assistance-HRI user study

# NAO-for shopping Assistance-HRI user study

This is a user study done to check how well a NAO robot can help for your shopping by providing suggestions about a product from your choice. The basic demographics details will be used for a user study other personal information choices will be discarded safely after the user study is completed.

This a quick survey for the NAO robot user study to collect results after the interaction with the robot.

\* Required

*Skip to question 1* *Skip to question 1*

## Personal information

These details will be protected till the user study is done after that it will be properly destroyed.

1. Participant id: \*

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2. Age: \*

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*Skip to question 3*

## Survey questions

There are ten questions that are important to understand the user study and robots performance. It might take just 3 mins to complete the survey.

3. 1. How often do you go to a supermarket? \*

*Mark only one oval.*

- ☐ Once in a month  
☐ Once in a week  
☐ Twice a week  
☐ More than 3 times a week  
☐ Daily

4. 2. Do you plan what to get before going to the supermarket? \*

*Mark only one oval.*

- ☐ yes  
☐ No  
☐ Maybe

5. 3. Do you like to have a shopping assistant to choose a product or to know the allergens present in the product? \*

*Mark only one oval.*

	1	2	3	4	5	
Not required assistance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Like an assistance

6. 4. Do you like the assistant to be a robot or a human? \*

*Mark only one oval.*

- ☐ Robot
- ☐ Human
- ☐ No preferences
- ☐ I like to shop without assistance

7. 5. Do you like to know the offers when shopping or a cheapest product in a category? \*

*Mark only one oval.*

- ☐ Yes
- ☐ No
- ☐ Maybe

8. 6. Does the product recommended by the robot meet your expectation? \*

*Mark only one oval.*

	1	2	3	4	5	
Not satisfied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Satisfied

9. 7. How good was the interaction with the robot? \*

*Mark only one oval.*

	1	2	3	4	5	
Not satisfied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Satisfied

10. 8. Do you think the robot needs more questions to understand the user's preferences? (Is the number of question appropriate?) \*

Mark only one oval.

	1	2	3	4	5	
Appropriate enough	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Requires more questions

11. 9. Do you think the image (appearance and performance) of the robot will affect your desire to shop with it? \*

Mark only one oval.

	1	2	3	4	5	
Not important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Great Influence

12. 10. Do you think the robots will be used as shopping assistant in the future? \*

Mark only one oval.

- ☐ Yes  
☐ No  
☐ Maybe

13. If you have any suggestions to improve the user study or the application and your personal feedback please feel free to comment them below:

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## STUDY INFORMATION SHEET

### **Study Title:** *NAO robot-Shopping Assistance*



PLEASE READ THIS SHEET IN ITS ENTIRETY

You are invited to take part in research taking place at the University of the West of England, Bristol. It is carried out as assignment for module UFMFHP-15-M Human-Robot Interaction. Before you decide whether to take part, it is important for you to understand why the study is being done and what it will involve. Please read the following information carefully and if you have any queries or would like more information please contact Haoming Huang, Keshava Shankar Nagu Koduru, Naresh Hemadri, Stefanos Lekanidis, Yi Li, , Faculty of Environment and Technology, Bristol Robotics Laboratory, University of the West of England, Bristol, [haoming2.huang@live.uwe.ac.uk](mailto:haoming2.huang@live.uwe.ac.uk), [keshava2.koduru@live.uwe.ac.uk](mailto:keshava2.koduru@live.uwe.ac.uk), [Naresh2.Hemadri@live.uwe.ac.uk](mailto:Naresh2.Hemadri@live.uwe.ac.uk), [stefanos2.lekanidis@live.uwe.ac.uk](mailto:stefanos2.lekanidis@live.uwe.ac.uk), [Yi3.Li@live.uwe.ac.uk](mailto:Yi3.Li@live.uwe.ac.uk).

### **Who is organising the research?**

The project is led by Haoming Huang, Keshava Shankar Nagu Koduru, Naresh Hemadri, Stefanos Lekanidis, Yi Li, University of the West of England. Manuel Giuliani is the supervisor for this research. Please find their details at the end of this document.

### **What is the aim of the research?**

The overall aim of the research is “Does assistance of the robot for product finding in a supermarket improves the shopping experience of the customer or not? “

The purpose of this study is to help the people in the supermarket. Not every salesman knows the allergen ingredients in a product, and it is time consuming to find a product in a big supermarket. During the pandemic, the queue is very big standing outside the supermarkets for a long time as the number of people in the shop is reduced. This experiment may provide an insight whether the usage of the robot is beneficial or not to find a product and the shopping time could be reduced or not for the customers. Even the salesman in the shop is changing it is even difficult for the salesman to remember all the products location and ingredients.

### **Why have I been invited to take part?**

We are recruiting participants who are already working at the University of the West of England and are aware of the current risk and safety procedures due to COVID-19 restrictions.

### **Do I have to take part?**

You do not have to take part in this research. It is up to you to decide whether you want to be involved. If you do decide to take part, you will be given a copy of this information sheet to keep and will be asked to sign a consent form. If you do decide to take part, you are free to stop and withdraw from the study at any time without giving a reason.

### **What will happen to me if I take part and what do I have to do?**

You will first be asked to sign a consent form, read a privacy notice, and provide some basic demographic information. You will then

They will be asked to make a role play interaction with the robot as a shopping assistant and where the robot will help them to find the products and then get suggestions on a product if required.

They will be asked to fill a questionnaire to get feedback and the experiment gets completed.

The study will take approximately 15 minutes.

Data will be gathered using the following methods:

### **Questionnaires**

They will be asked to fill a questionnaire form after completing the role-play task. This will be used to evaluate the experience of the robot interaction.

### **Written Feedback/Comments**

How satisfied are you with the robots' feedback and products recommended by the robot from 1 to 10?

### **Task Performance**

- Relevancy of the robot recommendation.
- Time taken to do the shopping.

## **What are the possible risks of taking part?**

*There are no risks involved with this experiment.*

In addition to the normal risk assessments, care has been taken to ensure the experiment is COVID-19 safe. You and the experimenter will be required to wear a mask and sanitise hands before the study, and safe distancing will be observed. All participants will be drawn from staff and students already complying with UWE Covid-19 safety rules. The robot and any other surfaces touched by the participants will be sanitised after each use.

## **What will happen to your information?**

All the information we receive from you will be treated in the strictest confidence.

All the information that you give will be kept confidential and anonymised. You will be assigned a participant ID that you can use to request the removal of your data from the study up to 7 days after completion of the experiment. After this point, the anonymised data will be analysed, and we will ensure that there is no possibility of identification or re-identification from this point.

Hard copy material (the consent form) will be kept in a locked and secure setting to which only the researchers will have access in accordance with the University's and the Data Protection Act 2018 and General Data Protection Regulation (GDPR) requirements.

## **Where will the results of the research study be published?**

The results of this usability study will be reported in the coursework report for UWE module UFMFHP-15-M Human-Robot Interaction.

## **Who has ethically approved this research?**

The project has been reviewed and approved by University of the West of England University Research Ethics Committee. Any comments, questions, or complaints about the ethical conduct of this study can be addressed to the Research Ethics Committee at the University of the West of England at: [Researchethics@uwe.ac.uk](mailto:Researchethics@uwe.ac.uk)

## **What if something goes wrong?**

If you have any questions about the ethical conduct of this research, have any complaints or concerns, or are uncertain about any aspect of your participation please contact the project supervisors or the University's research ethics committee.

**Project Supervisor:**

Professor Manuel Giuliani [manuel.giuliani@brl.ac.uk](mailto:manuel.giuliani@brl.ac.uk)

**What if I have more questions or do not understand something?**

If you would like any further information about the research, please contact in the first instance:

Haoming Huang, Keshava Shankar Nagu Koduru, Naresh Hemadri, Stefanos Lekanidis, Yi Li, -  
[haoming2.huang@live.uwe.ac.uk](mailto:haoming2.huang@live.uwe.ac.uk), [keshava2.koduru@live.uwe.ac.uk](mailto:keshava2.koduru@live.uwe.ac.uk), [Naresh2.Hemadri@live.uwe.ac.uk](mailto:Naresh2.Hemadri@live.uwe.ac.uk),  
[stefanos2.lekanidis@live.uwe.ac.uk](mailto:stefanos2.lekanidis@live.uwe.ac.uk), [Yi3.Li@live.uwe.ac.uk](mailto:Yi3.Li@live.uwe.ac.uk).

Thank you for agreeing to take part in this study.

You will be given a copy of this Participant Information Sheet and your signed Consent Form to keep.

## Ethical Review Checklist for Undergraduate and Postgraduate Modules

Staff and PG research students must not use this form, but should instead, if appropriate, submit a full application for ethical approval to the Faculty Research Ethics Committee (FREC).

*Please provide project details and complete the checklist below.*

### Project Details:

Module name	HUMAN ROBOT INTERACTION
Module code	UFMFHP-15-M
Module leader	Manuel Giuliani
Project Supervisor	Joe Daly, Manuel Giuliani
Proposed project title	NAO robot-Shopping Assistance

### Applicant Details:

Name of Student	Haoming Huang, Keshava Shankar Nagu Koduru, Naresh Hemadri, Stefanos Lekanidis, Yi Li.
Student Number	20053967, 20053970, 20052633, 20052656, 20053963.
Student's email address	<a href="mailto:haoming2.huang@live.uwe.ac.uk">haoming2.huang@live.uwe.ac.uk</a> , <a href="mailto:keshava2.koduru@live.uwe.ac.uk">keshava2.koduru@live.uwe.ac.uk</a> , <a href="mailto:Naresh2.Hemadri@live.uwe.ac.uk">Naresh2.Hemadri@live.uwe.ac.uk</a> , <a href="mailto:stefanos2.lekanidis@live.uwe.ac.uk">stefanos2.lekanidis@live.uwe.ac.uk</a> , <a href="mailto:Yi3.Li@live.uwe.ac.uk">Yi3.Li@live.uwe.ac.uk</a> .

CHECKLIST QUESTIONS		Yes/No	Explanation
1.	Does the proposed project involve <b>human tissue, human participants, animals, environmental damage, or the NHS.</b>	Yes	It requires humans to interact and role play.
2.	Will participants be clearly asked to give consent to take part in the research and informed about how data collected in the research will be used?	YES	They will be informed about the questionnaire data that is collected and a user consent form to fill.
3.	If they choose, can a participant withdraw at any time (prior to a point of "no return" in the use of their data)? Are they told this?	YES	Yeah, if they feel uncomfortable then they can withdraw without giving a reason.



CHECKLIST QUESTIONS		Yes/No	Explanation
4.	Are measures in place to provide confidentiality for participants and ensure secure management and disposal of data collected from them?	YES	Yeah, the statistical data will be taken used anonymously and any further information taken will be discarded
5.	Does the study involve people who are particularly vulnerable or unable to give informed consent (e.g., children or people with learning difficulties)?	NO	
6.	Could your research cause stress, physical or psychological harm to humans or animals, or environmental damage?	NO	
7.	Could any aspects of the research lead to unethical behaviour by participants or researchers (e.g., invasion of privacy, deceit, coercion, fraud, abuse)?	NO	
8.	Does the research involve the NHS or collection or storage of human tissue (includes anything containing human cells, such as saliva and urine)?	NO	

Your explanations should indicate briefly for Qs 2-4 how these requirements will be met, and for Qs 5-8 what the pertinent concerns are.

- **Minimal Risk:** If **Q 1 is answered 'No'**, then no ethics approval is needed.
- **Low Risk:** If **Qs 2-4 are answered 'Yes'** and **Qs 5-8 are answered 'No'**, then no approval is needed from the *Faculty Research Ethics Committee* (FREC). However, your supervisor must approve (a) your information and consent forms (Qs 2 & 3) and (b) your measures for participant confidentiality and secure data management (Q4).
- **High Risk:** If **any of Qs 5-8 are answered 'Yes'**, then you must submit an application for full ethics approval *before* the project can start. This can take up to 6 weeks. Consult your supervisor about how to apply for full ethics approval.

**Risk Assessment:** Separate guidance on risk assessment can be found on UWE's Health and Safety forms webpage at <https://go.uwe.ac.uk/RiskAssessment>. If needed, you must complete a Risk Assessment form. This must also be attached to your application for full ethics approval if your project is **High Risk**.

<b>Your supervisor must check your responses above <u>before</u> you submit this form.</b>
<b>Submit this completed form via the <i>Assignments</i> area in Blackboard (or elsewhere if so directed by the module leader or your supervisor).</b>
After you have uploaded this form, your supervisor will confirm it has been correctly completed by "marking" it as <i>Passed/100%</i> via the <i>My Grades</i> link on the Blackboard.

Further research ethics guidance is available at <http://www1.uwe.ac.uk/research/researchethics>

## CONSENT FORM

### Study Title: *NAO robot-Shopping Assistance*

This consent form will have been given to you with the Participant Information Sheet. Please ensure that you have read and understood the information contained in the Participant Information Sheet and asked any questions before you sign this form. If you have any questions please contact a member of the research team, whose details are set out on the Participant Information Sheet.

If you are happy to take part in this study please sign and date the form. You will be given a copy to keep for your records.

**Please read the statements below and sign below to give consent:**

I have read and understood the information sheet
I have been given the opportunity to ask questions and have had my questions answered to my satisfaction.
I am aware of the risks and benefits of taking part in the study
I am aware that data collected will be anonymised, kept in accordance with General Data Protection Regulation (GDPR), and will be viewed and analysed by the research team as part of their studies.
I am aware that I have the right to withdraw consent and discontinue participation without penalty before or during the study.
I am aware that I have the right to withdraw my data from the experiment up to 7 days after the completion of the experiment, using the participant ID that the researcher will provide.
I have freely volunteered and am willing to participate in this study.
I am willing to have my questionnaire responses collected.

Name (Printed).....

Signature..... Date.....

## **PRIVACY NOTICE**

### **Study Title: *NAO robot-Shopping Assistance***

#### **I. PURPOSE OF THE PRIVACY NOTICE**

This privacy notice explains how the University of the West of England, Bristol (UWE) collects, manages and uses your personal data before, during and after you participate in this focus group. 'Personal data' means any information relating to an identified or identifiable natural person (the data subject). An 'identifiable natural person' is one who can be identified, directly or indirectly, including by reference to an identifier such as a name, an identification number, location data, an online identifier, or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person.

This privacy notice adheres to the General Data Protection Regulation (GDPR) principle of transparency. This means it gives information about:

- How and why your data will be used for the research;
- What your rights are under GDPR; and
- How to contact UWE Bristol and the project lead in relation to questions, concerns or exercising your rights regarding the use of your personal data.

This Privacy Notice should be read in conjunction with the Participant Information Sheet and Consent Form provided to you before you agree to take part in the research.

#### **II. WHY ARE WE PROCESSING YOUR PERSONAL DATA?**

UWE Bristol undertakes research under its public function to provide research for the benefit of society. As a data controller we are committed to protecting the privacy and security of your personal data in accordance with the (EU) 2016/679 the General Data Protection Regulation (GDPR), the Data Protection Act 2018 (or any successor legislation) and any other legislation directly relating to privacy laws that apply (together "the Data Protection Legislation"). General information on Data Protection law is available from the Information Commissioner's Office (<https://ico.org.uk/>).

#### **III. HOW DO WE USE YOUR PERSONAL DATA?**

We use your personal data for research with appropriate safeguards in place on the lawful bases of fulfilling tasks in the public interest, and for archiving purposes in the public interest, for scientific or historical research purposes.

We will always tell you about the information we wish to collect from you and how we will use it.

We will not use your personal data for automated decision making about you or for profiling purposes.

Our research is governed by robust policies and procedures and, where human participants are involved, is subject to ethical approval from either UWE Bristol's Faculty or University Research

Ethics Committees. This research has been approved by UWE Bristol's Ethics Committee. The research team adhere to the **Ethical guidelines of the British Educational Research Association (and/or the principles of the Declaration of Helsinki, 2013) and the principles of the General Data Protection Regulation (GDPR).**

For more information about UWE Bristol's research ethics approval process please see our Research Ethics webpages at:

[www1.uwe.ac.uk/research/researchethics](http://www1.uwe.ac.uk/research/researchethics)

#### IV. WHAT DATA DO WE COLLECT?

The data we collect will vary from project to project. Researchers will only collect data that is essential for their project. The specific categories of personal data processed are described in the Participant Information Sheet provided to you with this Privacy Notice.

#### V. WHO DO WE SHARE YOUR DATA WITH?

We will only share your personal data in accordance with the attached Participant Information Sheet and your Consent.

#### VI. HOW DO WE KEEP YOUR DATA SECURE?

We take a robust approach to protecting your information with secure electronic and physical storage areas for research data with controlled access. If you are participating in a particularly sensitive project UWE Bristol puts into place additional layers of security. UWE Bristol has Cyber Essentials information security certification.

Alongside these technical measures there are comprehensive and effective policies and processes in place to ensure that users and administrators of information are aware of their obligations and responsibilities for the data they have access to. By default, people are only granted access to the information they require to perform their duties. Mandatory data protection and information security training is provided to staff and expert advice available if needed.

#### VII.

#### VIII. HOW LONG DO WE KEEP YOUR DATA FOR?

Your personal data will only be retained for as long as is necessary to fulfil the cited purpose of the research. The length of time we keep your personal data will depend on several factors including the significance of the data, funder requirements, and the nature of the study. Specific details are provided in the attached Participant Information Sheet. Anonymised data that falls outside the scope of data protection legislation as it contains no identifying or identifiable information may be stored in UWE Bristol's research data archive or another carefully selected appropriate data archive.

#### IX. YOUR RIGHTS AND HOW TO EXERCISE THEM:

Under the Data Protection legislation, you have the following **qualified** rights:

- (1) The right to access your personal data held by or on behalf of the University;
- (2) The right to rectification if the information is inaccurate or incomplete;
- (3) The right to restrict processing and/or erasure of your personal data;
- (4) The right to data portability;
- (5) The right to object to processing;

- (6) The right to object to automated decision making and profiling;
- (7) The right to [complain](#) to the Information Commissioner's Office (ICO).

**Please note, however, that some of these rights do not apply when the data is being used for research purposes if appropriate safeguards have been put in place.**

We will always respond to concerns or queries you may have. If you wish to exercise your rights or have any other general data protection queries, please contact UWE Bristol's Data Protection Officer ([dataprotection@uwe.ac.uk](mailto:dataprotection@uwe.ac.uk)).

If you have any complaints or queries relating to the research in which you are taking part please contact either the research project lead, whose details are in the attached Participant Information Sheet, UWE Bristol's Research Ethics Committees ([research.ethics@uwe.ac.uk](mailto:research.ethics@uwe.ac.uk)) or UWE Bristol's research governance manager ([Ros.Rouse@uwe.ac.uk](mailto:Ros.Rouse@uwe.ac.uk))

v.1: This Privacy Notice was issued in April 2019 and will be subject to regular review/update.