

**EXPLANATORY STATEMENT**

**Project ID:** 41775

**Project title:** Investigating Interactions in a Human-Robot Collaborative Task

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You are invited to take part in this study. Please read this Explanatory Statement in full before deciding whether to participate in this research. If you would like further information regarding any aspect of this project, you are encouraged to contact the researcher via the phone number or email address listed above.

Researcher Details and Roles

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**What does the research involve?**

This project explores human responses and overall collaboration dynamics in a human-robot collaborative (HRC) task. Specifically, it aims to understand how the presence of robot collaboration affects the task process and the human worker's perception of the robot.

During this study, you will be assisted by a KUKA robotic arm in the assembly and disassembly of a mock car power battery at our robotics lab. You will be asked to work alongside the robot, performing various tasks as outlined in the instruction sheet. Throughout the session, your interactions with the robot will be observed. You will be asked to complete an online questionnaire at different points during the session to capture your perceptions and experiences. Additionally, the session will be video, and audio recorded for further analysis. After the completion of the task, you will be briefly interviewed in the same lab in which the testing took place (Clayton - 23 College Walk - Engineering 60 (60) - Ground Level - G25) to gather more in-depth insights into your experience and finally debriefed. The total duration of this experiment will be approximately 90 minutes.

**Why were you invited for this research?**

You are chosen to participate in this study because you filled in the sign-up sheet advertised in the recruitment advertisement. Your email address was collected via the sign-up sheet that allowed us to contact you.

# Consenting to participate in the project and withdrawing from the research

At the beginning of the questionnaire, you are asked to answer whether you consent to 1) participating in this study, 2) being video and audio recorded, and 3) having your data included in the publicly available dataset.

You can withdraw at any point during this study and any data already collected on you will be removed. You can also contact the research student (Mr Finlay Callahan) up to 48 hours after your study to request having your data removed with your given Participant ID.

# Possible benefits and risks to participants

# As a participant in this human-robot collaboration study, you will contribute to the advancement of collaborative robotics. This research aims to enhance our understanding of how human workers interact with robots and to develop better robotic strategies. The findings from this study could lead to the development of more efficient and safer collaborative robots that can work alongside humans in various industrial settings.

# The total duration of the experiment will be kept under 90 minutes to minimize fatigue. The KUKA robotic arm used in this project is a safe and reliable platform, and the research team has undergone thorough safety training for its operation. The assembly and disassembly tasks involve non-hazardous materials. If you consent to have your data included in the publicly available dataset, there is a possibility that others may be able to identify your participation in this research from the video recordings.

# Confidentiality

The results of the project will be published as research publications (conferences and journals) in de-identified form. Data recorded with the survey will be used in a de-identified form for analysing and improving a human-robot handover model. If you provide your consent, video and survey data of your study will be included in a publicly available dataset accessible to researchers for understanding human-robot interaction. Your Participant ID will be used in this dataset.

# Storage of data

Data collected with this project will be stored digitally on Monash Robotics Group’s secure S Drive and will be kept indefinitely.

# Use of data for other purposes

If you provide your consent, video recordings and survey data collected from this project will be included in a human-robot interaction dataset available to researchers in the field for other research projects where ethics approval has been granted. Participant IDs will be used in this dataset. CI of the project will review and grant access to the raw data stored digitally on Monash Robotics Group’s secure S Drive. While de-identified summary information of the dataset, together with sample surveys, instructions, and codes of this project will be stored as a public repository on the GitHub open-source platform.

**Results**

The results of the project will be published as research publications (conferences and journals) in de-identified form.

# Complaints

Should you have any concerns or complaints about the conduct of the project, you are welcome to contact the Executive Officer, Monash University Human Research Ethics Committee (MUHREC):

Executive Officer

Monash University Human Research Ethics Committee (MUHREC)

Room 111, Chancellery Building D,

26 Sports Walk, Clayton Campus

Research Office

Monash University VIC 3800

Tel: +61 3 9905 2052 Email: muhrec@monash.edu Fax: +61 3 9905 3831

Thank you,

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# Finlay Callahan