

LANCASTER UNIVERSITY DEPARTMENT OF COMPUTING

RESEARCH INFORMATION SHEET

TITLE OF RESEARCH: Analysis of a pose matching solution for an interactive game

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INTRODUCTION

You will be taking part in a research study aimed at evaluating a pose matching system for an interactive game. The goal of the game is to match a set of poses at the indicated times as fast as possible. To evaluate the selected set of poses used for the game as well as the pose matching algorithm used to classify the player's pose, several videos depicting people performing a sequence of these poses will be collected.

It is important that you read and understand several principles that apply to all who take part in our studies;

- a) taking part in the study is entirely voluntary;
- b) personal benefit may not result from taking part in the study, but knowledge may be gained that will benefit others;
- c) any significant findings will be discussed with you if you desire;
- d) you may withdraw from the study at any time.

The nature of the study, the risks, inconveniences, discomforts, and other pertinent information about the study are discussed below. You are urged to discuss any questions you have about this study with the investigator before you sign this consent.

In accord with all of our research protocols, privacy will be fully protected and confidentiality maintained at all times.

BACKGROUND & PURPOSE:

This research study is concerned with evaluating and potentially improving the pose matching solution created for a gesture-controlled theme-park attraction. In order to make the evaluation as relevant as possible, an in-house dataset featuring people performing poses designed for this particular game will be required.

To replicate the conditions in which the game will be played and thus the way in which the pose detection will be performed, video data will be collected using the [Luxonis OAK-D](#) depth-camera placed at a height of 60 cm, positioned vertically and angled at 30 degrees upwards.

The collected data will be manually labelled to reflect the shown poses and fed to a set of pose matching solutions. These will classify the received data as either of the poses. The produced predictions will be compared with the true labels and used to calculate evaluation metrics such as accuracy of the selected method.

STUDY PROCEDURE:

You are being asked to participate in a study that will require your cooperation in one or more of the following:

1. Familiarizing self with a set of 7 2D icons representing 6 poses used by the game and 1 idle pose. The poses will not be mimicked by the researcher, and it is up to the study participant to interpret it.
2. Performing a sequence of randomized poses (provided by the researcher) in front of a camera 4 to 5 times.
3. Applying a set of the following conditions:
 - a. Wheelchair user. Requires the participant to sit on an office chair.
 - b. Face covering. Requires the participant to put on a face mask.
 - c. Culture appropriate attire. Requires the participant to select and put on 1 or 2 culture appropriate outfits from a collection of 4 provided sets.

When writing the results from our dataset into a project report or any other form of documentation, steps are taken to ensure anonymity for all those involved in the study. No personal details will be recorded. Confidentiality will be maintained at all times. Any recordings that are made are the property of the researcher and will be kept in a secure environment and destroyed at the conclusion of the research.

RISKS OF PARTICIPATION IN THE STUDY:

The risks of participating in this study are minimal.
It is the investigators' intention that your identity in these studies will remain confidential.
Your particular contribution to the study will be anonymized.

BENEFITS:

There may be no personal benefit to you from participating in this project. However, some personal benefits of this research may include learning more about techniques employed by gesture-controlled games and ideas behind pose matching solutions.

We believe this work can make an important contribution to current debates on approaches to effective pose estimation and matching.

COSTS AND COMPENSATION:

You will not be paid for participating in this study.

There is unlikely to be any cost - financial or other - to you for participation in the study.

CONFIDENTIALITY:

All information collected in this study belongs to the fieldworker and will be maintained in a confidential manner at Lancaster University. Nobody, other than the fieldwork researcher, will have access to the data. Any identifiable data (including recordings of participants' voices) on portable devices (eg audio recorders, etc) will be erased from it as quickly as possible and in the meantime the device will be stored securely. Any recordings will be destroyed at the end of the project. Although rare, it is possible that disclosure may be required by law. Otherwise, the information will not be disclosed to third parties without your permission. If the study is published, your name will be kept confidential.

PEOPLE TO CONTACT:

If you have further questions related to this research study, you may call Dr Emma Wilson, Dept of Computing and Communications, Lancaster University

Email: e.d.wilson1@lancaster.ac.uk

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You may also if you wish contact an independent person about this research – specifically, Adrian Friday, Head of School.

School of Computing and Communications

(<http://www.scc.lancs.ac.uk/>)

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