Australian National University

Participant Information Sheet

Researcher:
My name is Vimukthini Pinto and I am a PhD candidate in Research School of Computer Science at the Australian National University.

Project Title: Quantifying difficulty of novelty detection

General Outline of the Project:

- **Description and Methodology:** I am conducting a research to find out the difficulty of game levels in video games and the difficulty for human players to find out that something is changed in the game environment. I am using Angry Birds as my testing domain.
- **Participants:** I intend to obtain data from 20-30 voluntary participants.
- **Use of Data and Feedback:** The data will be used to produce peer-reviewed published articles and conference publications. Summary statistics of the data collected for the research along with the published papers will be made available to participants at this link: https://github.com/Vimukthini/Difficulty_Measures.
- **Project Funding:** Not applicable

Participant Involvement:

- **Voluntary Participation & Withdrawal:** Your participation in this research is voluntary, and you may decline to take part or to withdraw from the research without providing an explanation at any time until the work is prepared for publication. Within the research, you may also decline to answer any question. The data you provide will not be accessible to anyone until you press the submit button, which means you can withdraw at any time during the answering process.

- **What does participation in the research entail?** You are invited to play a selected set of Angry Birds game levels. Angry Birds (PG rating: G) is a physics-based game where you have to shoot at pigs using a set of birds.
- The experiment is conducted in three phases:
- In the first phase, you will be asked to play the game. The objective of this phase is to record the performance of the player (score and pass/fail status) and to make the player familiar with the dynamics of the normal Angry Birds game environment.
- In the second phase, you will be given a set of Angry Birds game levels screenshots and you will be asked to provide the difficulty of passing such a game (In a Likert scale, by just looking at the level).
- In the third phase, you will be given a new set of games with objects that will produce a different behaviour (but look the same). You will be asked on the difficulty of detecting a difference in the gameplay (Number of shots needed to detect novelty). The objective of this phase is to find the difficulty of detecting new game objects.

  You will only be asked to rank the difficulty of passing the game, the difficulty of detecting the difference in gameplay and describe the difference you observed (the novelty in the game). The results you provide is not used to measure your ability in playing Angry Birds. They will be used to validate theoretically developed measures.

- **Location and Duration:** The estimated duration of this experiment is around 20-30 minutes. For the voluntary participants who have access to the research school of computer science at Australian National University can participate in the data collection session we organize at a computer lab. We also share a link where any other participant can play the game online and provide the answers in a google form. There will not be follow up communications with the participants.

- **Remuneration:** Not applicable.

- **Risks:** The research does not carry a risk to participants or to the community. As I'm not collecting your personal information, I will not be able to track your responses.

- **Benefits:** It is unlikely that you will personally benefit from participation in this research. However, the results we obtain from you will help to evaluate our theoretically developed difficulty measures. We hope these measures improve the future game development process and evaluating AI in games.

- **Implications of Participation:** Not applicable.

Exclusion criteria:

- **Participant Limitation:** Not applicable.

Confidentiality:

- **Confidentiality:** We keep your data identity confidential. Access to the data is only limited to the research team. Published results will only be reported in aggregate, and you will not be identifiable within published outputs.

Privacy Notice:

In collecting your personal information within this research, the ANU must comply with the Privacy Act 1988. The ANU Privacy Policy is available at https://policies.anu.edu.au/ppl/document/ANUP_010007 and it contains information about how a person can:

- Access or seek correction to their personal information;
- Complain about a breach of an Australian Privacy Principle by ANU, and how ANU will handle the complaint.

Data Storage:

- **Where:** Data will be securely stored on password-protected computers in the Research School of Computer Science at the Australian National University. Physical records will be kept in a locked filing cabinet in my office.

- **How long:** All research data will be retained and securely stored for at least five years following publications arising from the research.

- **Handling of Data following the required storage period:** After the storage period, all physical records will be removed from the data and the electronic data will be archived at the Australian Data Archive (www.ada.edu.au) for use in later research, including potentially by other researchers.

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Queries and Concerns:

- **Contact Details for More Information:** Any requests for information or queries regarding the study should be directed to vimukthini.inguruwattage@anu.edu.au (+61 42 0247789) or to my supervisor Professor Jochen Renz (jochen.renz@anu.edu.au).

- **Overseas Contacts (if relevant):** Not applicable.

- **Contact Details if in Distress:** Not applicable.

Ethics Committee Clearance:

The ethical aspects of this research have been approved by the ANU Human Research Ethics Committee (Protocol 2020/717). If you have any concerns or complaints about how this research has been conducted, please contact:

Ethics Manager
The ANU Human Research Ethics Committee
The Australian National University
Telephone: +61 2 6125 3427
Email: Human.Ethics.Officer@anu.edu.au