



Ollscoil Chathair  
Bhaile Átha Cliath  
Dublin City University

**School of Computing  
RESEARCH ETHICS COMMITTEE**

**APPLICATION FORM FOR ETHICAL REVIEW OF A  
RESEARCH PROJECT INVOLVING HUMAN PARTICIPANTS  
WHICH IS IN THE CATEGORY OF NOTIFICATION ONLY**

There are 3 generally accepted levels of ethical review for projects carried out in a University or similar setting. These are notification only, expedited and full committee.

This notification only level of review is to approve relatively low-risk research involving human participants, primarily using social science methodologies in which any personal information collected is not of a sensitive nature. The School of Computing Research Ethics Committee has been delegated responsibility by the University to approve ethics submissions from undergraduate and taught Masters projects only, which are in the category of notification only.

Examples of projects in this category include:

- Anonymous surveys in which the topic itself is not likely to elicit significant difficulties for the participants, such as: anonymous internet surveys (e.g. Survey Monkey), street questioning.
- Observation (without audio or visual recording) of public settings where privacy would not normally be expected, such as observing people on streets or at sports events.
- Research carrying no risks beyond those of everyday life (as experienced by the intended participant population), such as asking people's opinions about products or services; asking students about educational experiences; monitoring the impact of daily activities.
- Interviews with public figures, professionals or others in their professional capacity regarding their professional activities.
- Analysis of data (e.g. health records) which have had all identifying information removed by the data holder and been provided to the researcher in accordance with data protection legislation.
- Collection of biological samples which are anonymised and do not require invasive techniques (e.g. hair, nails).

If your project is using data from a public repository like Kaggle or is not generating or using any form of personal data then you do not need research ethics approval, you do not need to complete and to submit this form and your project supervisor should indicate this on the project dashboard.

If your project involves collecting or processing [personal data which is of a personal nature](#), you must first complete the DCU online Data Protection training course and review the "[Data Protection – Key Points for DCU Researchers](#)" guidance from the Data Protection Unit to assist you in meeting your legal obligations under GDPR and associated Irish law.

Once you have completed this form (if you need to) you should save it as a PDF file, not WORD, and upload it to the your project dashboard before you start gathering data. It will then be read and assessed by two members of the committee and once two members of the committee approve your submission you will be automatically notified by email and your project can start data gathering.

There are strict deadlines for submitting this form for each class group, undergraduate and taught Masters by which your submission must be made and you will be informed of these deadlines by your course board chair or project co-ordinator. If you do not submit by these deadlines then the research ethics committee is not obliged to approve your submission and when that happens and your project is assessed and graded at the end of the year, you will be awarded 0 for that component of your project.

**SECTION 1 – GENERAL DETAILS****1.1 Project Title**

ARrangelt

**1.2 Applicant Details**

Name	Student or Supervisor	E-mail
Jade Hudson	Student	jade.hudson5@mail.dcu.ie
Sruthi Santhosh	Student	sruthi.santhosh2@mail.dcu.ie
Hyowon Lee	Supervisor	hyowon.lee@dcu.ie

Other Investigators: *Including any external to DCU*

Name	School/Unit/External Institution	E-mail

**1.3 Key Project Dates**

Proposed start date for data collection	Proposed end date for data collection	Proposed project completion date
16/12/2024	25/04/2025	02/05/2025

**1.4 Please indicate which academic award**

Undergraduate <input checked="" type="checkbox"/>	Taught Masters <input type="checkbox"/>
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**1.5 Please confirm the location(s) where the research will be carried out**

*If research will be carried out abroad, you will need to address the ethical challenges raised by this in Section 3 of your application - consult the Conducting Research Abroad document in the Ethics Resources and Guidelines section of the [DCU Research Ethics webpage](#)).*

Dublin City University (DCU), Glasnevin campus

**1.6 Please state what additional permissions may be required to access participants.**

*Specify from whom the permission is required (e.g. a school Board of Management), and when their written approval will be obtained*

None

## SECTION 2 – PROJECT DESIGN AND METHODOLOGY

Research Overview - Please respect the indicated word counts in the following sections and explain all acronyms in full text the first time they appear.

### 2.1 Provide a brief description of the research (max 250 words):

*Please use lay language, include the scientific/theoretical background of study and a justification as to why this research project should proceed in that context*

**Description:** This research aims to develop an augmented reality (AR) application that allows users to visualise furniture and decor in their living space using their smartphone camera. By integrating a furniture catalogue, AR object placement, room scanning, and customisation options, this project aims to offer users an interactive, realistic way to experiment with home decor arrangements before making purchasing decisions.

**Theoretical background:** AR technology has proven beneficial in enhancing user experiences by merging digital elements with real-world environments. Existing applications, such as IKEA's AR features, allow limited visualisation but often fall short in providing a seamless experience for multiple items or room measurements. Our project addresses these limitations by focusing on usability, adaptability, and personalisation.

**Justification:** The research project is necessary as it uses AR technology to simplify home decor decision-making, potentially reducing returns and improving customer satisfaction in the furniture industry. With the rise in online shopping, a tool that enables accurate visualization of products in users' homes is timely and beneficial. This study will contribute to the fields of AR and user-centered design by exploring the practical application of AR in enhancing consumer experiences.

### 2.2 Please state the aims and objectives of the project (max 200 words)

**Aims:** The primary aim of this project is to develop an AR-based mobile application that enhances user experience in home decor shopping by enabling virtual visualisation of furniture within their living spaces. The app aims to bridge the gap between online furniture browsing and real-world setup.

**Objectives:**

- To build a scalable AR app that provides a realistic representation of furniture in a user's space.
- To integrate a comprehensive furniture catalogues and customisation options.
- To design user-friendly features like room measurement and multi-item visualisation.
- To evaluate user satisfaction and usability through feedback, ensuring the app addresses the needs of the target audience.
- To contribute to research in AR-driven consumer applications and explore the benefits and limitations of such technologies in retail.

In order to evaluate the usability of its AR app, we need to conduct small scale usability testing. We plan to recruit 5 participants, each of them brought to a classroom or a computer lab and perform 3 simple tasks with the app followed by short questions and informal interview. Total duration for each participant session will be maximum 20 minutes.

### 2.3 Please confirm your methods of data collection:

*Tick all relevant check boxes and provide details for each one, including any devices used to collect data, and whether the data will be anonymous, potentially identifiable or identifiable at point of collection*

Method	Describe briefly
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<input checked="" type="checkbox"/> Interviews or focus groups	User feedback on app usability, design, and effectiveness in helping with decor decisions. Data collected will be anonymous.
<input checked="" type="checkbox"/> Surveys/questionnaires	User feedback on app usability, design, and effectiveness in helping with decor decisions. Data collected will be anonymous.
<input type="checkbox"/> Audio/video recordings	
<input checked="" type="checkbox"/> Public observations	Observations of user interactions with the app, noting any usability issues or behavioral patterns. Data will be anonymous and focused on general user behaviors.
<input type="checkbox"/> Persons in public office	
<input checked="" type="checkbox"/> Using existing data (incl. secondary data)	Analysis of existing studies on AR applications in e-commerce and user experience to inform design decisions and feature prioritization
<input type="checkbox"/> Using human derived material (biological samples)	
<input type="checkbox"/> Standard tests (educational/personality etc.)	
<input type="checkbox"/> Standard educational practices	
<input type="checkbox"/> Other (please specify)	

#### 2.4 Please confirm who the participants on this study will be, including group size and composition:

*Include associated demographic characteristics, and state how your proposed sample size was determined (e.g. power analysis)*

The study will involve approximately 5 participants from diverse backgrounds, focusing on adults who wish to shop for home decor or furniture online. Participants will be recruited through online advertisements. This sample size is estimated based on a manageable group size for feedback collection and observation, sufficient for identifying common usability trends.

Demographics: Participants will be 18 years and older, representing a range of ages, backgrounds, and technological familiarity to ensure a comprehensive evaluation of the app's usability.

#### 2.5 Please outline your recruitment process, including where you are sourcing participants from and your criteria for inclusion/exclusion:

*Where gatekeepers are involved, outline the procedures relating to their involvement*

The recruitment process will primarily involve email advertisements and personal networks. Invitations will be sent to close contacts, classmates, and friends who may be interested in participating in the user testing. These individuals will be informed about the study's purpose, tasks involved, and expectations.

The criteria for inclusion will include:

- Participants must be familiar with mobile applications, particularly those involving augmented reality (AR) technology.
- Participants must be 18 years or older.

There are no gatekeepers involved in the recruitment process. The researchers will directly contact participants. If any gatekeepers, such as supervisors, are involved in facilitating access to participant groups, their role will be limited to ensuring that participants meet the inclusion criteria and are available to participate.

**2.6 Addressing participant vulnerability – if your participants fall into any of the following categories, please check the relevant tick box/boxes and state below what special arrangements will be made to protect them:**

*If your participants are not in any of these categories, tick N/A*

<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Children under 18 years of age
<input type="checkbox"/> Persons in unequal relationships with the researcher ( <i>e.g. lecturer-student, therapist-client, employer-employee</i> )
<input type="checkbox"/> People with a recognised or diagnosed intellectual, physical or mental impairment
<input type="checkbox"/> People confined to institutions ( <i>e.g. prisoners, residents in 24 hr nursing facilities</i> )
<input type="checkbox"/> People who have undergone traumatic or adverse emotional events
<input type="checkbox"/> People with diminished cognitive ability
<input type="checkbox"/> Marginalised sections of society
<input type="checkbox"/> Other (please specify)
<b>Special arrangements:</b>

**2.7 Involvement of children under 18 years of age – if your participants are in this category, please confirm compliance with the following:**

*If your participants are not in this category, tick N/A*

<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> We confirm that we have read and agree to act in accordance with the DCU Child Protection policy and procedures (as per the <a href="#">DCU Child Protection Unit webpage</a> )
<input type="checkbox"/> We confirm that we have put in place safeguards for the children participating in the research
<input type="checkbox"/> We confirm that we have supports in place for children who may disclose current or historical abuse (whether or not this is the focus of the research)
<input type="checkbox"/> We confirm that all requirements will be met prior to commencing the research (e.g. TUSLA Children First Training completed, Garda Vetting in place)

**2.8 Please confirm how the results of the research will be disseminated:**

*Include a statement on whether the participants will be provided with any information as to the findings or outcomes of the project*

The result will only be shown in the final project report and presentation.



## SECTION 3 – ETHICAL ISSUES AND RISK MANAGEMENT

**3.1 Please identify all issues including ethical issues which may arise in the course of this research. What are the potential risks to participants, and how will those risks be addressed or minimised?**

*Potential risks can be physical, psychological, social, legal, etc. Please include details of any additional support being provided for participants during/after the study*

**Risks: No more risk than normal apps/ day to day mundane tasks and app usage** - Potential risks include discomfort or frustration if users find the app challenging to use. There is also the risk of privacy concerns if personal data is collected inadvertently. To address these, all data collection will be anonymous through a pre-made login and participants will be informed about data usage. Additionally, participants will be offered technical support and a user guide to minimize usability issues.

**3.2 Please identify the potential benefits (direct and/or indirect) to those participating in this research:**

*Potential benefits should outweigh the potential risks to participants*

Participants may benefit from early access to a tool that could simplify home decor shopping, allowing them to visualize potential purchases more effectively. They will also contribute to the development of a consumer-focused AR application that can improve online shopping experiences in the furniture industry.

**3.3 Please describe what measures/protocols you have put in place in the event that there are any unexpected outcomes or adverse effects to participants arising from involvement in the research:**

In case of unexpected technical issues or adverse effects, participants will be advised to either stop the session or limit app usage to short sessions. For technical issues, they will receive troubleshooting assistance to fix the issues; if participants experience discomfort (e.g., eye strain from prolonged AR use or overall tiredness), they will be advised to stop, given the option to discontinue the session or continue after sufficient rest. During the testing period, our supervisor will be kept informed about the process, and upon any unexpected outcomes/adverse effects observed, he will be contacted for advice.

**3.4 Do you intend to provide payment or incentives to participants?**

Yes ☐

No ☒

*If Yes, please consult the REC Guidelines on the Use of Compensation and Incentives (in the Ethics Resources and Guidelines section of the [DCU Research Ethics webpage](#)) before providing additional details below*

N/A

### 3.5 Does this research raise any potential risks for the researchers themselves?

*Please consider the location/environment where the research is being conducted, exposure to distressing data content etc.*

Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
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*If Yes, please describe further and explain what risk management procedures will be put in place to minimise these risks to researchers:*

N/A
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### 3.6 Does this research raise any potential conflict of interest?

*Please consider any potential real or perceived conflicts of interest that might influence the integrity of the research, or give rise to bias in conducting and reporting the research, or affecting publication (consult the [DCU Conflict of Interest Policy](#) for assistance)*

Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
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*If Yes, please identify and explain the steps being taken to address that conflict:*

N/A
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### 3.7 Please describe how the conduct of the research will be monitored:

*Regular oversight by the PI is required to ensure the project conforms to the procedures set out in this application (especially where several people are involved in carrying out the research procedures)*

We will regularly communicate with our supervisor to monitor the project's progress, oversee its development, and ensure usability testing are conducted effectively. Frequent check-ins will help address any challenges promptly and maintain alignment with the project objectives and ethical guidelines.
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## SECTION 4 – CONFIDENTIALITY AND DATA MANAGEMENT

### 4.1 Considering your previous response in section 2.3 of the form on data collection, please confirm whether you are collecting or processing personal data in this research project:

*Personal data is any information about a living person, where that person is either identified, or could be identified from the data itself, or when it is combined with other data. This includes paper based, electronic and biological samples data. If your data is fully and completely anonymous, it is not personal data.*

Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
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*If Yes, please confirm your compliance with the following by ticking the checkboxes:*

<input checked="" type="checkbox"/> We confirm that we have completed the DCU Data Protection training module on Loop.
<input checked="" type="checkbox"/> We confirm that we have read the <a href="#">“Data Protection – Key Points for DCU Researchers”</a> guidance on the DCU Data Protection Unit (DPU) website and agree to protect and manage our data in accordance with same.
<input checked="" type="checkbox"/> We have assessed the degree of risk inherent in the personal data being used in the research project, and confirm that all DPU GDPR requirements have been met prior to submitting this application (e.g. completion of Data Protection questionnaire, confirmation that any survey tool being used is GDPR compliant, that required Data Processing or Sharing Agreements will be in place, etc.)

### 4.2 Data access – please confirm whether access to participant data is confined to the investigators named on this application:

Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
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*If No, please name who the other individuals are and why they need access. Any proposed transfer of data (including outside of the EU) should be detailed here.*

N/A
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### 4.3 Data storage – please confirm compliance with the following:

<input checked="" type="checkbox"/> Data collected on mobile devices will be protected with a strong password/passphrase at a minimum, and/or encrypted if the device supports it
<input checked="" type="checkbox"/> Data will be removed from mobile devices as soon as is practicable and stored in a secured location in DCU (on server or institutional Google Drive)
<input type="checkbox"/> Paper based data will be held securely in locked cabinets in DCU, with access restricted to the named researchers
<u>Specific arrangements in relation to biological samples should be stated here:</u> N/A
<u>Any exemptions to the above compliance statements should be justified here:</u> N/A

#### 4.4 Please confirm who will be responsible for the secure storage of data generated by the research:

Name the relevant DCU investigator/s

Sruthi Santhosh  
Jade Hudson

#### 4.5 Please confirm how long the data will be held for:

For personal data, consult section 15: Retention of Personal Data in the [“Data Protection – Key Points for DCU Researchers”](#) guidance on the DCU Data Protection Unit (DPU) website

Data will be held on until the end of the research (7<sup>th</sup> May 2025)

#### 4.6 Please confirm what will happen to the data collected at the end of the study:

Please tick the relevant checkbox and complete the associated follow-up section for that category

Archived <input type="checkbox"/>	Destroyed <input checked="" type="checkbox"/>	Other <input type="checkbox"/>
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##### 4.6.1 Archived data

Please provide the following details:

Name the DCU staff member responsible for archival and future use of data	
Confirm whether the data will be made available to other researchers, and if so, how?	
Confirm <u>how</u> the data will be prepared for archive (e.g. will datasets be anonymised)	
Confirm <u>where</u> the data will be archived and who will be allowed to access it	

##### 4.6.2 Destroyed data

Please provide the following details – Note: for student projects, the supervisor must take responsibility for data destruction if there is no guarantee the student will have access to the data at the time of destruction

Please justify why the data will be destroyed	We will destroy the user testing data after the submission of the project as it will no longer be needed. This decision aligns with ethical and legal standards, such as data minimization principles, to protect user privacy and ensure compliance with data protection regulations. Retaining unnecessary data could pose risks, such as unauthorized access, and serves no legitimate purpose after the project's completion.
Name the DCU researcher responsible for destruction of data	Jade Hudson and Sruthi Santhosh
Confirm when the data will be destroyed (specify date)	09/05/2025

Confirm compliance with the following destruction methods (tick relevant boxes)	<input checked="" type="checkbox"/> Electronic data will be overwritten/securely deleted <input type="checkbox"/> Paper based data will be confidentially shredded <input type="checkbox"/> Medical samples will be disposed in accordance with the relevant DCU approved SOP
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**4.6.2 Other - Please explain what will happen to the data if not being archived or destroyed:**

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## SECTION 5 – PARTICIPANT INFORMATION AND INFORMED CONSENT PROCEDURES

In addition to completing this form you are required to attach, within the single PDF that you submit, a copy of (1) the Participation Information Sheet which you share with your participants and (2) a copy of the Informed Consent Form which your participants sign.

**5.1 Please confirm that the following items have been addressed in your Participant Information Sheet which should be shared with all participants whether it involves online or in-person data gathering:**

*The items below should be used as headings in your information sheet. Note the language used under each item must reflect the participant age group and corresponding comprehension level– if your participants have different comprehension levels (e.g. both adult and child participants) then separate sheets must be prepared for each set. Templates are available via the [REC Forms - Applications, Templates and Amendments section](#) of the Research Ethics website.*

Checklist – tick the relevant check box for each item	Yes	No
Introductory Statement (Researcher names and titles, school, title of the research study)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
What is this research about?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Why is this research being conducted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Why have you been invited to take part?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
What will happen if you decide to take part in this research study?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
How will your data be used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
How will your privacy be protected (including any legal limits to confidentiality)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
What are the benefits of taking part in this research study?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
What are the risks of taking part in this research study?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Can you change your mind at any stage and withdraw from this study?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
How will you find out what happens with this project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Contact details for further information	<input checked="" type="checkbox"/>	<input type="checkbox"/>

*If you marked any item as No, please explain and justify why:*

*If the participants are interested in finding out about what happens with the project they are free to contact us on a follow up.*

**5.2 Informed Consent Procedures – please confirm whether written consent is to be obtained:**

*Please tick the relevant checkbox*

Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
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*If Yes, describe the procedures by which written consent will be obtained. If you are involving child participants, you will also need to obtain their written assent. Templates are available via the [REC Forms - Applications, Templates and Amendments section](#) of the Research Ethics website.*

Yes, written consent will be obtained through online documents. Participants will receive a consent form via a secure online platform, where they can review the study details, rights, and any relevant information. They will then be required to provide their electronic signature or confirmation to indicate their informed consent. This process ensures that participants fully understand the purpose and scope of the project before agreeing to take part.

*If No, describe the procedures regarding how consent/assent will be obtained:*

If you are gathering data from an online process such as Google Form or SurveyMonkey then you should use a page such as the one below, to capture participants' informed consent and your data gathering should not proceed until participants have completed this form with the appropriate answers.

**Participant – please complete the following (by clicking Yes/No for each question)**

I have read the Plain Language Statement (or had it read to me) \*

☒ Yes

☐ No

I understand the information provided \*

☐ Yes

☐ No

I have had an opportunity to ask questions and discuss this study \*

☐ Yes

☐ No

I understand the information provided in relation to data protection \*

☐ Yes

☐ No

I have received satisfactory answers to all my questions \*

☐ Yes

☐ No

I understand I may withdraw from the Research Study at any point \*

☐ Yes

☐ No

I have read and understand the arrangements to be made to protect confidentiality of data, including that confidentiality of information provided is subject to legal limitations \*

☐ Yes

☐ No

I have read and understand confirmations relating to any other relevant information as indicated in the PLS \*

☐ Yes

☐ No

I consent to participate in this research study \*

☐ Yes

☐ No

## SECTION 6 – SUBMISSION CHECKLIST AND RESEARCHER DECLARATION

**6.1 Please confirm all required supplementary documentation to be included in this application within Section 7:**

Checklist – tick the relevant check box for each item	Yes	N/A
Participant Information Sheet/s	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Informed Consent Form/s	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Informed Assent Form/s	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Recruitment Advertisement	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Questionnaire/Survey	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Interview/Focus Group Questions	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Debriefing Material	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Bibliography	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Approval from another Research Ethics Committee	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Evidence of other external approvals (e.g. Board of Management letter)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Evidence of internal approvals (e.g. BSC approval review letter)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other – provide details here:	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 6.2 Signed Declaration

*By submitting this form, the applicant (and supervisor) agree to the following:*

*The information contained herein is, to the best of my knowledge and belief, accurate. I have read the University's current research ethics guidelines, and accept responsibility for the conduct of the procedures set out in the attached application in accordance with the form guidelines, the [REC guidance and resources](#), the University's [Conflict of Interest Policy](#), its [Code of Good Research Practice](#) and any other condition laid down by the Dublin City University Research Ethics Committee. I have attempted to identify all risks related to the research that may arise in conducting this research and acknowledge my obligations and the rights of the participants.*

*I also acknowledge my requirement to be informed as to other duties and legal obligations applying to my research, and to comply with these duties and obligations – this includes being informed about DCU Data Protection guidelines for researchers, DCU Child Protection policy and procedures (where relevant) and DCU Insurance requirements.*

*I and my co-investigators and/or supporting staff have the appropriate qualifications, experience and facilities to conduct the research set out in the attached application and to deal with any emergencies and contingencies related to the research that may arise. Research will not commence until required consents and approvals are in place.*

#### Electronic Signature(s):

Supervisor: \_\_\_\_\_

Print Name here: \_\_\_\_\_

Date: \_\_\_\_\_

Student(s) signature(s): \_\_\_\_\_

Print Name(s) here: \_\_\_\_\_

Date: \_\_\_\_\_

## SECTION 7 – SUPPLEMENTARY DOCUMENTATION

Please attach all required documentation as confirmed by you in the previous section. The application should then be saved as one file in PDF format before submission via the project dashboard.



Ollscoil Chathair  
Bhaile Átha Cliath  
Dublin City University

# DUBLIN CITY UNIVERSITY

## Participant Information Sheet

### Introductory Statement

**Researcher Names:** Sruthi Santhosh and Jade Hudson

**School:** Dublin City University (Glasnevin Campus)

**Title of the Research Study:** ARrangelt (Augmented Reality-Based Virtual Home Decor Application)

### What is this research about?

This research aims to develop an augmented reality (AR) application that allows users to visualise furniture and decor in their living space using their smartphone camera. By integrating a furniture catalogue, AR object placement, room scanning, and customisation options, this project offers users an interactive, realistic way to experiment with home decor arrangements before making purchasing decisions.

### Why is this research being conducted?

The study is being conducted to explore how AR technology can improve consumer experiences in home decor shopping by enabling accurate visualisation of products in real spaces. It addresses limitations in existing AR applications by focusing on usability, adaptability, and personalisation.

### Why have you been invited to take part?

You have been invited to participate because you match the demographic criteria for this study, such as being an individual interested in home decor and technology or having experience using AR applications.

### What will happen if you decide to take part in this research study?

If you choose to participate, you will be asked to test the AR application by placing virtual furniture in your space using your smartphone camera. You may also be asked to provide feedback through surveys or interviews. The session will last approximately 10-20 mins.

### How will your data be used?



The data collected will be analysed to assess the user experience, usability, and effectiveness of the AR application. All data will be anonymised and securely stored.

### **How will your privacy be protected (including any legal limits to confidentiality)?**

Your privacy will be protected through anonymisation, secure data storage, and restricted access to research personnel only. Confidentiality may have legal limits if disclosure is required by law.

### **What are the benefits of taking part in this research study?**

By participating, you will contribute to research on AR technology and its applications in home decor. Your feedback will help improve the usability and effectiveness of AR applications in consumer decision-making.

### **What are the risks of taking part in this research study?**

There are minimal risks associated with participation. Potential risks include minor discomfort from prolonged use of AR technology and privacy concerns regarding data collection, which will be mitigated by strict confidentiality measures.

### **Can you change your mind at any stage and withdraw from this study?**

Yes, participation is voluntary, and you may withdraw at any time without any consequences. If you choose to withdraw, your data will be removed from the study.

### **How will you find out what happens with this project?**

#### **Contact details for further information**

For any questions or concerns, please contact:

Sruthi Santhosh

DCU

sruthi.santhosh2@mail.dcu.ie

(+353) 0894576592

Jade Hudson

DCU

jade.hudson5@mail.dcu.ie

(+353) 0871242223

If participants have concerns about this study and wish to contact an independent person, please contact: The Secretary, Dublin City University Research Ethics Committee, % Research and Innovation Support, Dublin City University, Dublin 9. Tel 01-7008000, e-mail [rex@dcu.ie](mailto:rex@dcu.ie).



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Dublin City University

# DUBLIN CITY UNIVERSITY

## Informed Consent Form – DCU REC Template (approx. 300 words)

**Research Study Title:** ARrangelt (Augmented Reality-Based Virtual Home Decor Application)

### Clarification of the purpose of the research

This study aims to evaluate the usability and effectiveness of an Augmented Reality (AR)-Based Virtual Home Decor Application. The research will involve participants interacting with the app to test key features such as AR object placement, furniture catalogue browsing, room scanning and saved room layouts. The goal is to collect feedback to improve the app's functionality and user experience.

As part of this study, data will be collected on participants' interactions with the app, including responses to surveys and questionnaires. The data will be processed solely for research purposes and will remain confidential.

### Confirmation of particular requirements as highlighted in the Participant Information Sheet:

#### Participant – please complete the following (Circle Yes or No for each question)

I have read the Participant Information Sheet (or had it read to me)	Yes/No
I understand the information provided	Yes/No
I have had an opportunity to ask questions and discuss this study	Yes/No
I have received satisfactory answers to all my questions	Yes/No
I am aware that my interview will be audiotaped (if necessary)	Yes/No

- I understand that my participation is voluntary and that I can withdraw at any time without any consequences.

- I understand that my data will be collected, anonymized, and securely stored, and I consent to its use for research purposes.

- I have read and understood the information in this form. My questions and concerns have been answered by the researchers, and I have a copy of this consent form. Therefore, I consent to:

☐ Participating in this study

☐ Being recorded (if applicable)

Participant Name: \_\_\_\_\_

Participant Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Researcher Name: \_\_\_\_\_

Researcher Signature: \_\_\_\_\_

Date: \_\_\_\_\_

# User Testing Tasks & Questionnaire

## Task 1: Room Scanning

**Instruction:** Use the room scanning feature to detect walls and floor space for better furniture placement.

### Survey for Task 1:

- How effective was the room scanning feature in detecting your space? (Scale: 1-5, 1 = Not Effective, 5 = Very Effective)
  - Did the application correctly align the furniture with the scanned room dimensions? (Yes/No, with optional comments)
  - Did you experience any technical issues with room scanning? If so, please describe.
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## Task 2: Placing and Arranging Furniture

**Instruction:** Browse the furniture catalogue, select any furniture item of your choice, and place it in a suitable location in your room. After placing the first item, choose one or two more furniture pieces and arrange them to fit well within the space.

### Survey for Task 2:

- How easy was accessing and selecting items from the catalogue? (Scale: 1-5, 1 = Not Intuitive, 5 = Very Intuitive)
  - How visually appealing was the display of furniture items in the catalogue? (Scale: 1-5, 1 = Not Appealing, 5 = Very Appealing)
  - How easy was it to place the furniture in the AR environment? (Scale: 1-5, 1 = Very Difficult, 5 = Very Easy)
  - Did the furniture placement feel accurate and realistic? (Yes/No, with optional comments)
  - How easy was it to add and arrange multiple furniture items? (Scale: 1-5, 1 = Very Difficult, 5 = Very Easy)
  - Did the furniture snap or align correctly with the environment when moved? (Yes/No, with optional comments)
  - Did you experience any difficulties browsing the catalogue, placing, or arranging the furniture? If so, please describe.
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## Task 3: Removing and Replacing Furniture

**Instruction:** Remove one of the previously placed furniture items and replace them with new one from the catalogue. Ensure they are arranged appropriately within the space.

**Survey for Task 3:**

- How easy was it to remove an existing furniture item? (Scale: 1-5, 1 = Very Difficult, 5 = Very Easy)
  - How easy was it to add and arrange replacement furniture? (Scale: 1-5, 1 = Very Difficult, 5 = Very Easy)
  - Did the furniture placement and movement feel smooth and realistic? (Yes/No, with optional comments)
  - Did you encounter any issues while replacing furniture? If so, please describe.
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**General Feedback:**

- How likely are you to use this application for home decor planning in the future? (Scale: 1-5)
- Would you recommend this application to others interested in home decor planning? (Yes/No, with reasons)
- Was there any feature you expected but did not find in the application? If so, please describe.
- How satisfied were you with the overall experience? (Scale: 1-5, 1 = Not Satisfied, 5 = Very Satisfied)