**Ethical Approval for Non-Clinical Research Involving Human Participants**

**FORM A: Application for ethical approval for low risk projects**

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| Name of Applicant | Kaloyan Marshalov |
| School | Science and Engineering – Computing |
| University e-mail Address | [kvzmarshalov@dundee.ac.uk](mailto:kvzmarshalov@dundee.ac.uk) |
| Title of Project | Dundee University TouAR - The effects of Narrative Generation methods (based on Augmented Reality Interactions) on overall User Experience. |
| Co-Investigators (with internal School or external organisational affiliation) |  |
| Projected Start Date | 07/10/2019 |
| Estimated End Date | 05/05/2020 |
| Funder (if applicable) |  |
| Version of Application (1, 2, 3…)\* | 3 |

\* After revision, please update the version number before re-submission.

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| **Students Only** | |
| Level of Study (Undergraduate (UG); Taught Postgraduate (TPG); Research Postgraduate (RPG) | UG |
| Name of University of Dundee Supervisor | Dr Michael Crabb |

**Note: Students must copy in their supervisor when submitting the application for review.**

**1. Project Overview**

Please provide, with reference to the relevant literature, an overview of the research project providing a short explanation (maximum 400 words) of the research questions the project will address and why the study is justified.

Please write this section in a way that is accessible to a person who is not an expert in your field.

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| Storytelling is amongst the oldest human artforms. It is one of the main methods humans use in order to understand an environment and communicate personal experience. The increased popularity of digital entertainment has given birth to Interactive Storytelling – a narrative technique in which the plot of a story is not predetermined. The goal of these systems is to automatically construct fully comprehensive storylines, by observing the users’ actions. While most research is focused on the generation of the narrative, barely any work is done in exploring the methods of user interaction. One possible medium for that is Augmented Reality (AR). It encourages an entirely new method for interaction in which user intent is probabilistic rather than deterministic. We therefore invite participants in the study to take an interactively generated narrative tour using Augmented Reality technology. This will challenge the current methods for narrative generation, by providing real-world input. We are interested in the users’ perception of such tours and therefore aim to determine: **(1a) RQ:** **What impact do Narrative Generation methods of storytelling (based on Augmented Reality Interactions) have on overall User Experience.**  The tour will be designed around the University of Dundee campus, using information gathered from the University’s Archives. Taking the experience gathered from the gaming industry (B. Bostan, T. Marsh 2010 & H. Barber, D. Kudenko 2009), a narrative generator will be built around non-fictional stories. Taking inspiration from the more recent work related to multimodal interactions (M. Cavazza, F. Charles 2016) a set of AR interactions will be used for directing the storyline. The participants will then be invited to complete a questionnaire followed by a semi-structured interview. These will play a major role when evaluating the user experience and its experiential qualities (C. Roth, P. Vorderer, C. Klimmt 2009). |

**2. Aims and Objectives**

What are the aims and objectives of the project?

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| **(2) The aim of this project is to understand how Interactive Storytelling (using Augmented Reality) can have an impact on the way people experience storytelling.** |

**3. Research Design and Methods**

Please describe the design of your study and the research methods including information about any tasks or measuring instruments (validated or otherwise) that you will be using. *If you are using non-validated instruments (e.g., surveys or questionnaires[[1]](#footnote-1) you have designed, interview questions, observation protocols for ethnographic work or topic lists for unstructured data collection) please attach a copy to this ethics application.*

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| The participants in this study will be asked to use the application for a duration **(3a) that is no longer than 60 minutes**, around **(3b) their home**, following a virtual tour around the Dundee University campus**.** The narrative generation system will cover the entirety of the campus. There will be no set starting point for the tour, however special considerations will be made in order to adapt for the participant’s abilities. Participants will be followed by a member of the research team.  In order to do the tour, the participant would be required to use a mobile device (their own or one provided by the researcher). They will then be asked to use the device’s camera and begin exploring the custom narrative generated for them. The potential mediums for interaction include touch display controls, changes in the device’s orientation, real-life gestures and the geographical position of the device. In order to simulate a real-world GPS traversal, the researchers will manually alter the location coordinates of the application. Participants will then be asked to discuss how they found the overall experience of using the software.  **(3c)** There are no rewards or payments for taking part in this project.  **(3d)** There are no data collection tools being used that should be given as an appendix to this form.  **(3e)** A Google Forms Survey is used in lieu of a simple physical form for the questionnaire. It is comprised of 21 questions in a 7-point Likert scale format. Link to the survey: https://docs.google.com/forms/d/e/1FAIpQLSfW3SoFUJEfpttxiOJixcwMGSI08hIJdwe1DeJ1bkNbRQvu4w/viewform?usp=sf\_link  **(3f)** The participants will be asked to use an AR application on the device, which will log their overall storyline, the interactions with the device and the events it triggered. It will also keep data on the user’s geographical location and the path they took around campus. Once the tour has been completed, the participants will be asked to take part in a short informal conversation, which evaluates their experience when using the application.  **(3g)** The format of the data taken during the tour will be in the form of log files, linking the geographical location and the time of interaction with the unique identifiers of the interactions themselves and the narrative changes that resulted. No pictures, videos or audio recordings will be collected while using the application. The data taken during the final conversations will be in the form of audio recordings.  **(3h)** The data collected during the tour will be anonymous, as there are no personal traits or distinguishing features that can be linked to any individual. There is no concern for members of the public, which appear on screen during interactions, as visual and auditory data is not required for this study.  The audio recording taken from the conversations after the study will be transcribed and the original recordings will be deleted in order to maintain the anonymity of the participants.  **(3i)** The data will be analysed for links between interactions and changes in the narrative generation. We are interested in exploring the combinations of these that can be linked to an improved user experience. The transcription data will be analysed using standard qualitative data analysis techniques in order to verify that.  **(3j)** The duration of the project will be 7 months in total (one whole academic year). |

**4. Identification and Recruitment of Participants**

How will participants be identified and recruited? Will your research involve participants outside of the UK? If so where?

Please provide details on how and by whom they will be contacted; please also add information on any exclusion criteria, should they apply. *Please attach the wording of any emails, letters, social media adverts or other written approaches that you may use for recruitment purposes.*

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| **(4a)** The participants are individuals aged over 16.  **(4b)** The participants will be identified through convenience sampling.  **(4c)** Participants will be approached using email and social media channels by the research team.  **(4d)** The information given will be on the overall structure of the study, explaining what the AR tour is, how it is generated and what the research is trying to discover. A small description of the informal conversation will be provided.  **(4e)** Sample size for this work is no more than 20 participants.  **(4f)** Participants must be in the same household as the researcher and have been in isolation for over 14 days as per government recommendations.  **(4g)** The research does not involve participants outside the UK. |

**5. Informed Consent**

How will you obtain informed consent? Are you satisfied that all participants have capacity to make their own decisions and understand the risks?

Please explain how and when participants will be informed about the scope of the research, what their involvement would entail and their rights under data protection legislation. *Please provide the participant information sheet and consent form with this application*; if consent is not obtained in written format (e.g., oral communication, deliberate action to opt-in to surveys or questionnaires), please provide details of how consent will be obtained and recorded. If the project involves photography or video- or audio-recording of participants, explicit consent will need to be given; where applicable this includes consent for someone not on the direct research team to have access to the participant’s data (e.g. for transcription). Explain how you have considered and will address consent for the preservation and potential sharing and [reuse of data](https://www.dundee.ac.uk/media/dundeewebsite/ethics/Forms-A-and-B-Research-Data-Management-Guidance-v1-10122018.pdf).

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| **(5a)** Participants will be contacted before participating in the project with an electronic consent form and information sheet and will be asked to fill these in. Participants that do not do this will receive paper versions of the two documents prior to starting the study. No participants will start the study without completing those. Participants will be able to withdraw from the process at any point and have all their associated data deleted.  **(5b)** Consent will be taken through the University of Dundee informed consent form.  **(5c)** Audio recording and device interaction data storage will take place and informed consent for this is included in the form.  **(5d)** Anonymity and confidential information is included in the form.  **(5e)** Participants will receive a verbal debrief after completing the study.  **(5f)** Information about the sharing and reuse of information is included in the form.  **(5g)** The consent form is structured in a way that allows the participants to consider their capacity to make their own decisions and understand risks. |

**6a. Data Management: Lawful Processing of Data**

Data protection legislation[[2]](#footnote-2) requires participants to be informed of the [lawful basis](https://ico.org.uk/for-organisations/guide-to-the-general-data-protection-regulation-gdpr/principles/lawfulness-fairness-and-transparency/) for processing their personal data. At the University of Dundee, the normal basis for the lawful processing of personal data in research is that 'processing is necessary for the performance of a task carried out in the public interest or in the exercise of official authority vested in the controller'. If you intend to use another lawful basis you must contact the University’s [Data Protection Officer](mailto:dataprotection@dundee.ac.uk) (DPO) for advice and insert the lawful basis agreed with the DPO below.

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| Standard DPO will be used in this work |

**6b. Data Management: Planning**

Please describe your plan for managing the data[[3]](#footnote-3) you will collect during your project and how it complies with data protection legislation. Include information on:

i) The type and volume of data; ii) Where and for how long will the data be stored and what measures will be in place to ensure secure storage; iii) Whether the data will be anonymised or pseudonymised[[4]](#footnote-4); iv) How secure access will be provided to data for collaborators; v) Whether and how data will be shared for [reuse](https://www.dundee.ac.uk/media/dundeewebsite/ethics/Forms-A-and-B-Research-Data-Management-Guidance-v1-10122018.pdf) by other researchers beyond the project (including details on any access restrictions); vi) Processes in place to erase and/or stop processing an individual participant’s data (except where this would render impossible or seriously impair the research objectives)[[5]](#footnote-5); vii) Processes in place for individuals to have inaccurate personal data rectified, or completed if it is incomplete; viii) Who has overall responsibility for data management for the research project; ix) [Arrangements for collection and transfer of data outside the UK](https://www.dundee.ac.uk/media/dundeewebsite/ethics/Forms-A-and-B-Research-Data-Management-Guidance-v1-10122018.pdf).

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| **i)** The collected data is a mix of device interaction logs, location details and audio recordings.  **ii)** Data will be anonymised and then placed into an open access repository. As per UoD Policy MRD/V3/7.18, Section 2.8 and UKRI Data Management Guidance – Data will be retained for 10 years from the data of any publication which fundamentally relies on the data.  **iii)** Data will be fully anonymised.  **iv)** Data will be anonymised and then placed into an open access repository, allowing access to collaborators.  **v)** Data will be anonymised and then placed into an open access repository, allowing access beyond the project.  **vi)** All data is fully anonymised. Recital 26 of GDPR (Not applicable to anonymous data) therefore applies.  **vii)** All data is fully anonymised. Recital 26 of GDPR (Not applicable to anonymous data) therefore applies.  **viii)** Data management responsibilities for the project lie with the project lead.  **ix)** All data is fully anonymised. Recital 26 of GDPR (Not applicable to anonymous data) therefore applies. |

**7. Other Permissions**

Are any other permissions (e.g., from local authorities) required? If so which?

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| No other permissions will be required. |

**8. Risks of Harm to Researchers and Participants**

Risks of harm. Please detail any risks associated with the project. Does the research involve fieldwork (either in the UK or overseas)? Does the research incur a risk of injury or ill-health above the level of risk prevalent in daily living? *If yes, please complete the relevant risk assessment form(s) (*[*general risk assessment form*](https://www.dundee.ac.uk/safety/policy/general/spa11-2002/) *and/or the risk assessment for* [*Travelling on University Work Overseas*](https://www.dundee.ac.uk/safety/policy/general/spa44-2010/)*) and submit with this application.*

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| Safety of the participants has been taken into consideration when doing this project.  **(8a, b)** The research team understands that asking participants to use technology with the current COVID-19 situation can be associated with a small degree of risk.  **(8c, d)** To mitigate the risks, the researchers (which also serve as guides) will be briefed before the start of the research. Each participant will be briefed at the beginning of their tour. All of this is explained within the consent form/information sheet. Both the researchers and the participants will have been in isolation for over 14 days. All surfaces that the participants/researcher were in contact with will be disinfected after use.  **(8e)** In addition to this, a standard University of Dundee Risk Assessment Form has been attached to this application.  **(8f, g)** No risks to the researcher have been identified. |

**9. Other Ethical Considerations**

Are there any other ethical considerations relating to your project which have not been covered above? If so, please explain.

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| There are no ethical considerations that have not been addressed already. |

**10. Documentation**

Please list all attached documentation, ensuring that each item has a date and version number.

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| A1 – Risk Assessment  A2 – Consent Form  A3 – Information Sheet  A4 – Informal Conversation Guide Sheet |

**11. Declaration**

By signing below I declare that I have read the University [Code of Practice for Non-Clinical Research Ethics on Human Participants](https://www.dundee.ac.uk/media/dundeewebsite/ethics/documents/Code-of-Practice-for-Non-Clinical-Research-Ethics-v2-July%202016.pdf) and that my research abides by these guidelines. I understand that this application and associated documents will be retained by the University.

**Principal Investigator or Student**



Name: Kaloyan Marshalov Date: 03/04/2020



Signature:

**Supervisor (for applications from students)**

Name: Dr Michael Crabb Date: 03/04/2020

Signature:



1. Please provide details of any survey tools you intend to use. The University approved online survey tool is ‘[Online surveys](https://www.onlinesurveys.ac.uk/)’ (formerly BOS). If you intend to use a different survey tool please indicate the reason. [↑](#footnote-ref-1)
2. The General Data Protection Regulation ((EU) 2016/679) and the UK Data Protection Act (2018). Further information can be obtained from the [University of Dundee data protection website](https://www.dundee.ac.uk/information-governance/dataprotection/) and the [website of the Information Commissioner’s Office](https://ico.org.uk/). [↑](#footnote-ref-2)
3. Note that staff and postgraduate research students are required to complete a research data management plan under the University of Dundee’s [Policy to Govern the Management of Research Data](https://www.dundee.ac.uk/media/dundeewebsite/ethics/documents/Policy-to-Govern-the-Management-of-Research-Data.pdf). However, providing you have included the information requested above, it is not necessary to attach a formal data management plan to this application. [↑](#footnote-ref-3)
4. (Article 4(5) of the General Data Protection Regulation describes pseudonymisation as: “The processing of personal data in such a way that the data can no longer be attributed to a specific data subject without the use of additional information”. An example would be where a coded reference or pseudonym is substituted for personally identifiable data. [↑](#footnote-ref-4)
5. The right to erasure under the General Data Protection Regulation does not apply if erasing the data would prejudice scientific or historical research, or archiving that is in the public interest. [↑](#footnote-ref-5)