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**Taught Programme Research Ethics Approval Application Form**

Research undertaken by taught students must receive ethical approval unless deemed exempt. This application form may be completed by an individual student or by a Programme Board/Lecturer for a group of similar research projects.

This application is completed by:

Student: ü OR Lecturer on behalf of Programme Board: o

**PART A**

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| **Applicant Details** | |
| Name: | Otito Mbelu, Rodrigo Almeida |
| Student ID:  (if relevant) | G00397738, G00377123 |
| Programme Title: | Computing in Software Development |
| Programme Stage: | Year 4 |
| Research Supervisor’s Name:  (if relevant) | Damien Costello |

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| **Project Details** | |
| Research Study Title: | Biometric Data Analysis in Digital Game Scenario |
| Research Study Summary (max 100 words):  This Research Study is a continuation of previous research done by Software Development Students titled ‘Biometric Data Collection for Performance Optimization in a Digital Game Scenario’ which seeks to collect user test and biometric data.  The aim of this research project is to:   * Build on the previous project and develop solutions to find correlations between a user's biometric data and performance in a Digital Game Scenario.   Eventually, this project will seek the answer the question: ‘Can the user’s current physical condition as indicated by their Biometric data, have any direct relationship with their performance in such a gaming scenario? | |

| **Risk Checklist**  Please answer ALL the questions in each of the sections below – Tick YES or NO | | | |
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|  | Will the research study….? | YES | NO |
| 1 | Involve direct and/or indirect contact with human participants? | ü |  |
| 2 | Involve analysis of pre-existing data which contains personal or sensitive information not in the public domain? |  | ü |
| 3 | Require permission or consent to conduct? | ü |  |
| 4 | Require permission or consent to publish? |  | ü |
| 5 | Have a risk of compromising confidentiality? |  | ü |
| 6 | Have a risk of compromising anonymity? |  | ü |
| 7 | Collect/contain personal data i.e. any information that relates to an identified or identifiable individual? |  | ü |
| 8 | Collect/contain sensitive personal data e.g. health data, sexual orientation, race religion? | ü |  |
| 9 | Contain elements which you OR your supervisor are NOT trained to conduct? |  | ü |
| 10 | Use any information OTHER than that which is freely available in the public domain? |  | ü |
| 11 | Involve respondents to the internet or other visual/vocal methods where participants may be identified? |  | ü |
| 12 | Include a financial incentive to participate in the research? |  | ü |
| 13 | Involve our own students or staff? | ü |  |
| 14 | Take place outside Ireland? |  | ü |
| 15 | Involve participants who are vulnerable or at risk? |  | ü |
| 16 | Involve any participants who are unable to give informed consent? |  | ü |
| 17 | Involve data collection taking place BEFORE informed consent is given? |  | ü |
| 18 | Involve any deliberate deception or covert data collection? |  | ü |
| 19 | Involve a risk to the researcher or participants beyond that experienced in everyday life? |  | ü |
| 20 | Cause (or could cause) physical or psychological harm or negative consequences? |  | ü |
| 21 | Use intrusive or invasive procedures? |  | ü |
| 22 | Involve a clinical trial? |  | ü |
| 23 | Involve the possibility of incidental findings related to participant health status? |  | ü |
| 24 | Involve the remuneration of research participants? |  | ü |

If, as a student, you answered **NO** to all the above questions your research supervisor will review, and if in agreement sign below to indicate that this form does not have to be submitted to the Taught Programme Research Ethics Committee.

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| *Name* |  | *Signed* |  | *Date* |  |

If you answered **YES** to any of the above questions, you need to complete part B below.

**PART B**

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| **1** | **Project Overview** |
| **Please give a brief overview of the study, including a summary of the aims and objectives.**  Help: Describe the purpose of the research and what question(s) the project should answer. | |
| This Research Study is a continuation of previous research done by Software Development Students titled ‘Biometric Data Collection for Performance Optimization in a Digital Game Scenario’ which seeks to analyse user test and biometric data.  The aim of this research project is to:   * Build on the previous project and develop solutions to find correlations between a user's biometric data and performance in a Digital Game Scenario.   Eventually, this project will seek the answer the question:   * Can the user’s current physical condition as indicated by their Biometric data, have any direct relationship with their performance in such a gaming scenario? | |

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| **2** | **Methodology** |
| **Please give a description of the methodology, including any data collection and analysis methods.**  Help: Give an outline of the study here. If the project is complex, you can also submit the research proposal/protocol (no more than 2-3 A4 sides) if this would help the reviewer’s understanding of the project. Include details of your (or the Research Supervisor’s) appropriate skills and qualifications to carry out this research. Consideration of how, and for what duration are stored should be provided under Section 7 below. | |
| User biometric data will be collected using a Smart Watch. Which will be synced to the watch manufacturer repository and in turn pulled to a secured database.  The analysis will be performed using Machine Learning techniques utilizing Artificial Neural Networks for regression analytics. Eventually, test results will be matched with biometric data to see if there are correlations. | |

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| **3** | **Main Ethical Considerations** |
| **Please give a brief description of the main ethical considerations involved in the study.**  Help: Highlight here the main ethical considerations for the study (which may concern, e.g., the type of participants, the sensitive nature of the study, the data collection process, security-sensitive research) and advise how the main issues will be addressed. If the project is funded, give details here, and whether there are any potential conflicts of interest involved in the study. NB: Section 5 below addresses: recruitment; voluntary participation; consent; and, the right to withdraw. Those details need not also be entered here. | |
| There are no conflicts of interest, and the project is not funded. | |

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| **4** | **Human Participants** |
| **If the study includes Human Participants (or their data), please give a description of who will be included.**  Help:   * Please note this should include sample size/number of participants, whether the project will focus on any particular groups/individuals, if it will include any at risk or vulnerable participants, participants aged 16 years or under, etc. Please also specify the rationale for including/excluding groups of participants. * If the research involves secondary data not in the public domain, give details in this section. | |
| For the research, physically active individuals that participate in work out activities at a minimum of 3 days a week are desired. Furthermore, the participants are expected to be regular console game players.  We expect a minimum of 4 participants to make the research viable and a maximum of 20 volunteers which will be separated into a control group and intervention groups. | |

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| **5** | **Recruitment, Voluntary Participation, Consent and Right to Withdraw** |
| **If the study includes Human participants, please give a brief description of the recruitment process, how voluntary participation will be ensured, if (and how) informed consent will be obtained prior to participants taking part in the study, and the right of withdrawal from the research process.**  Help:   * This should include clear information on how participants will be identified, approached and recruited; whether the study will include any covert research or deliberate deception; whether help is required from a third party/ gatekeeper to access participants; what information will be given to participants, etc. * If expenses or any incentives are to be offered to participants, give full details. * If research involves students, colleagues and/or other employees then specify the rationale for this and how issues of coercion or feelings of obligation will be addressed. * If data is held on participants, research using that data may require permission from the participant. * Regarding withdrawal from the study, discuss the different stages/dates a participant could withdraw or withdraw their data, and how they could do this. | |
| Please find the form volunteers will be prompted to fill out when scanning the QR code from the poster. The form also contains the consent and right of withdrawal.  <https://forms.office.com/e/EmhfampDUT> | |

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| **6** | **Risks and Benefits** |
| **Please give a brief description of how, when and where the research will take place and whether there are any risks and/or benefits involved.**  Help:   * This should include information on what participants will be required to do, the rationale for this and the level of risk involved. * When considering risks, please refer to risks to the participants (e.g., for research in sensitive areas, where there is a balance of power), the researcher, any other parties to the research; and also any health and safety issues for anyone involved (e.g., for lone researchers carrying out fieldwork). | |
| The research is a software project that analyses data and does not involve the volunteers performing any physical activity other than does in their normal routine.  Volunteers are expected to wear a biometric data monitoring device that records physical activities.  The volunteers are expected to play a game that will be installed on their computer. On average the game is expected to last for 15 minutes.  Data from the game and device monitor are collected during gameplay and stored in a secured database.  Regression and Correlation analysis are done using these data. | |

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| **7** | **Personal Data, Anonymity and Confidentiality** |
| **Please specify what type of information/data will be collected/analysed and the source(s). In addition, specify if and how the anonymity of participants will be ensured, and information be kept confidential.**  Help: This should include information on whether new information/data are being collected or uses data that are already in the public domain; whether the data includes personal data; whether the data includes sensitive personal data e.g. health data, sexual orientation, race, religion; how the data will be processed and stored; who will have access to it; who it will be shared with; how long data will be retained; how it will be destroyed; the Data Protection requirements for any sensitive personal data, etc. In addition, include whether there may be any requirements for disclosure of information to other parties due to professional practice or legal reasons. If there are limits to confidentiality, explain clearly how the participants would be advised about these limits and possible outcomes. | |
| There are basically two categories of data to be collected which are:   * Game test data that are generated during gameplay. * Biometric data gotten from a biometric data monitor (watch).   Specifically, the data to be collected from the Biometric data monitor are exhaustively listed below:   * Maximum Heart Rate * Average Heart Rate * Active Steps * HRV * Sleep (hours)   It is important to note that no data will not be traceable to any individual. | |
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| **8** | **Reporting and Dissemination** |
| **Please give details of the planned dissemination and specify if the findings from the research will be published and whether any permission is required for this.**  Help: This should include information on the methods of dissemination (e.g., dissertation/thesis) and/or what will be published and where (research papers, conference presentations). Specify if any permission is needed (e.g., from participants, clients, gatekeepers, etc.) prior to publication, and whether there are any potential issues relating to Intellectual Property Rights when creating or using materials. | |
| As indicated in section A. There are no plans at the moment to publish the research. | |

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| **9** | **Location of research** |
| **Will the research take place outside of Ireland?** | |
| **YES  NO  If yes, give details below.**  Help: If yes, please specify where the research will take place. Research must comply with the laws of the country where it is taking place and also comply with local Data Protection and Intellectual Property legislation: you must confirm that your research is compliant with local requirements and how you have ascertained this. Advise if the project requires ethical approval in-country and how this has been ascertained. If approval is required, a copy of this should be included in the application or details of the process of how it will be obtained. Please make reference to insurance and indemnity cover for the project where relevant.  Note: If data is to be processed or stored outside the EEA contact [dpo@atu.ie](mailto:dpo@gmit.ie) | |
| NO | |

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| **10** | **Collaborative Projects** |
| **Is the research a collaborative project (i.e., it involves more than one institution)?** | |
| **YES  NO  If yes, give details below.**  Help: If yes, please specify the other institutions involved and if ethical approval needs to be / has been given by them. Please also specify what procedures have been put in place to ensure ethical compliance from all partners.  Note: If personal data is being shared between institutions then a data sharing agreement must be in place. Contact dpo@atu.ie | |
| NO | |

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| **11** | **Any other permission or external ethical approval required to undertake the project** |
| **Please specify if the project requires any other ethical approval or permissions not mentioned previously in this application and how and when these will be obtained.**  Help:   * Other permissions: ethical approval does not give the right of access to the Institute’s students, staff or the use of Institute premises to carry out research, and you may need to contact an appropriate Institute gatekeeper for agreement to approach potential participants or for the use of premises, so please give details. * Gatekeepers: permission of a gatekeeper for initial access to participants may be required or to carry out data collection on their premises. * If the project requires approval from an external ethics committee, this should normally be obtained prior to submitting this application. * If a Disclosure and Barring Service check is required due to the specific participant group, give details. * Regarding insurance and indemnity cover, some projects will require individual confirmation of cover. See the Research Ethics Procedures document for more details. | |
| NO | |

**SUPPORTING DOCUMENTATION: what to submit with the application**

For projects involving human participants, you must submit, where appropriate, the Participant Information Sheet/s and consent form/s. You must also submit every communication a participant will see or receive. Failure to do so will cause delays to the application.

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| **DECLARATIONS AND SIGNATURES** |

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| **STUDENT** | | | |
| *I confirm that I will undertake this project as detailed in Part A and Part B of the application. I understand that I must abide by the terms of this approval and that I may not make any substantial amendments to the project without further approval. I understand that research with human participants or their data must not commence without ethical approval.* | | | |
| *Signed* | Rodrigo Almeida  Otito Mbelu | *Date*  *31/10/2023* |  |

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| **RESEARCH SUPERVISOR RECOMMENDATION FOR STUDENT PROJECT** | | | | | |
| *I confirm that the committee has considered part A and part B of the application. The project is viable and the student has the appropriate skills to undertake the project. Where applicable, the Participant Information Sheet and recruitment procedures for obtaining informed consent are appropriate and the ethical issues arising from the project have been addressed in the application. I understand that research with human participants must not commence without ethical approval. I recommend this project for approval.* | | | | | |
| *Name* |  | *Signed* |  | *Date* |  |
| Comment(s):  E.g. if similar research projects have been previously approved. | | | | | |

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| **LECTURER ON BEHALF OF PROGRAMME BOARD** | | | |
| *I confirm that the project will be undertaken as detailed in stage one and stage two of the application. I understand that I must abide by the terms of this approval and that I may not make any substantial amendments to the project without further approval. I understand that research with human participants or their data must not commence without ethical approval.* | | | |
| *Signed* |  | *Date* |  |

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| **PROJECTS APPROVED BY THE RESEARCH ETHICS SUB-COMMITTEE** | | | | | |
| *I confirm that this project was considered by the Taught Programme Research Ethics Committee and has received ethical approval.* | | | | | |
| *Chair* |  | *Signed* |  | *Date* |  |

*This form will be retained for the purposes of quality assurance of compliance and audit for THREE years*