

## APPLICATION FOR ETHICAL APPROVAL

In order for research to result in benefit and minimise risk of harm, it must be conducted ethically.

The University follows the OECD Frascati manual definition of **research activity**: “creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications”. As such this covers activities undertaken by members of staff, postgraduate research students, and both taught postgraduate and undergraduate students working on dissertations/projects.

The individual undertaking the research activity is known as the “principal researcher”.

This form must be completed and approved prior to undertaking any research activity.

## SECTION A: About You (Principal Researcher)

|   |                                 |                                      |
|---|---------------------------------|--------------------------------------|
| 1 | Full Name:                      | Kush Kumar Pate                      |
| 2 | Student Number:                 | 2409544                              |
| 3 | Email address:                  | 2409544@student.uwtsd.ac.uk          |
| 4 | Programme of Study:             | MSc Data and Artificial Intelligence |
| 5 | Director of Studies/Supervisor: | Dr. Seena Joseph                     |

## SECTION B: Internal and External Ethical Guidance Materials

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                                     |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------|
|   | Please list the core ethical guidance documents that have been referred to during the completion of this form (including any discipline-specific codes of research ethics, location-specific codes of research ethics, and also any specific ethical guidance relating to the proposed methodology). Please tick to confirm that your research proposal adheres to these codes and guidelines. You may add rows to this table if needed. |  |                                     |
| 1 | <b>UWTSD Research Ethics &amp; Integrity Code of Practice</b>                                                                                                                                                                                                                                                                                                                                                                            |  | <input checked="" type="checkbox"/> |
| 2 | <b>UWTSD Research Data Management Policy</b>                                                                                                                                                                                                                                                                                                                                                                                             |  | <input checked="" type="checkbox"/> |
| 3 |                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | <input type="checkbox"/>            |

## SECTION C: Details of Research Activity

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                               |                    |                |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|--------------------|----------------|
| 1 | Indicative title:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Predictive Maintenance in Textile Industrial Equipment Using Machine Learning |                    |                |
| 2 | Proposed start date:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2 February 2025                                                               | Proposed end date: | 30 August 2025 |
| 3 | <b>Purpose of Research Activity</b><br>This research aims to explore how machine learning (ML) can be used to predict failures in textile industrial equipment based on sensor data such as vibration, temperature, and pressure. Equipment downtime in textile manufacturing is often caused by reactive maintenance practices and lack of early warning systems. This study addresses that gap by developing and evaluating ML models capable of identifying early signs of equipment failure. The broader purpose is to enhance productivity, reduce unplanned maintenance costs, and support the adoption of Industry 4.0 technologies in traditional textile sectors. |                                                                               |                    |                |
| 4 | <b>Research Question</b><br>How can machine learning models (Random Forest, SVM, LSTM) be used to predict equipment failures in textile industries using sensor data?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                               |                    |                |

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 | <b>Aims of Research Activity</b><br>The study aims to identify the most effective machine learning techniques for predicting maintenance to minimise equipment failure in the textile industry.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 6 | <b>Objectives of Research Activity</b><br>Collect and preprocess sensor data (secondary dataset).<br>Implement and evaluate Random Forest, SVM, and LSTM.<br>Compare performance using precision, recall, F1-score.<br>Propose model integration with Web API for future real-time deployment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7 | <b>Proposed Data Collection Methods</b><br>This research will not involve the collection of any primary data from human participants. Instead, it will rely exclusively on secondary data obtained from a publicly accessible source containing equipment sensor readings relevant to the textile manufacturing industry.<br>The dataset includes time-series readings from various industrial sensors such as: <ul style="list-style-type: none"> <li>• Vibration sensors</li> <li>• Temperature sensors</li> <li>• Pressure sensors</li> </ul> These readings reflect operational and failure conditions of industrial equipment, enabling the application of machine learning models for predictive maintenance.<br>The data will be securely downloaded and stored in password-protected cloud storage (e.g., University OneDrive or Google Colab). All data handling will comply with GDPR and the university's data management policies.<br>Specific data preparation techniques will include: <ul style="list-style-type: none"> <li>• Organizing the data into structured formats</li> <li>• Handling missing or anomalous values</li> <li>• Normalizing features using Python libraries (e.g., Pandas, NumPy)</li> <li>• Splitting the dataset into training, validation, and test sets for model development and evaluation</li> </ul> Since the dataset is fully anonymized and contains no personally identifiable information, there are no privacy risks to individuals. No human interviews, questionnaires, focus groups, or recordings will be used during the research.<br>If future stages of the research require the collection of primary data or human involvement, separate ethical approval will be sought. |

#### SECTION D: Scope of Research Activity

|    | Will the research activity include:                                                                                                             | YES                      | NO                                  |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------|
| 1  | Use of a questionnaire or similar research instrument?                                                                                          | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2  | Use of interviews?                                                                                                                              | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3  | Use of focus groups?                                                                                                                            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4  | Use of participant diaries?                                                                                                                     | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5  | Use of video or audio recording?                                                                                                                | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6  | Use of computer-generated log files?                                                                                                            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 7  | Participant observation with their knowledge?                                                                                                   | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 8  | Participant observation without their knowledge?                                                                                                | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 9  | Access to personal or confidential information without the participants' specific consent?                                                      | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 10 | Administration of any questions, test stimuli, presentation that may be experienced as physically, mentally or emotionally harmful / offensive? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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|                                                                                                     |                                                                                                     |                          |                                     |
|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------|
| 11                                                                                                  | Performance of any acts which may cause embarrassment or affect self-esteem?                        | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 12                                                                                                  | Investigation of participants involved in illegal activities?                                       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 13                                                                                                  | Use of procedures that involve deception?                                                           | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 14                                                                                                  | Administration of any substance, agent or placebo?                                                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 15                                                                                                  | Working with live vertebrate animals?                                                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 16                                                                                                  | Procedures that may have a negative impact on the environment?                                      | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 17                                                                                                  | Other primary data collection methods. Please indicate the type of data collection method(s) below. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                                                                     | Details of any other primary data collection method:                                                |                          |                                     |
| <input checked="" type="checkbox"/> No interviews, focus groups, surveys, or human data collection. |                                                                                                     |                          |                                     |

## SECTION E: Intended Participants

|    | Who are the intended participants:                                                                                 | YES                      | NO                       |
|----|--------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| 1  | Students or staff at the University?                                                                               | <input type="checkbox"/> | <input type="checkbox"/> |
| 2  | Adults (over the age of 18 and competent to give consent)?                                                         | <input type="checkbox"/> | <input type="checkbox"/> |
| 3  | Vulnerable adults?                                                                                                 | <input type="checkbox"/> | <input type="checkbox"/> |
| 4  | Children and Young People under the age of 18? (Consent from Parent, Carer or Guardian will be required)           | <input type="checkbox"/> | <input type="checkbox"/> |
| 5  | Prisoners?                                                                                                         | <input type="checkbox"/> | <input type="checkbox"/> |
| 6  | Young offenders?                                                                                                   | <input type="checkbox"/> | <input type="checkbox"/> |
| 7  | Those who could be considered to have a particularly dependent relationship with the investigator or a gatekeeper? | <input type="checkbox"/> | <input type="checkbox"/> |
| 8  | People engaged in illegal activities?                                                                              | <input type="checkbox"/> | <input type="checkbox"/> |
| 9  | Others. Please indicate the participants below, and specifically any group who may be unable to give consent.      | <input type="checkbox"/> | <input type="checkbox"/> |
| 10 | How many participants are expected?                                                                                |                          |                          |
| 11 | Who will the participants be?                                                                                      |                          |                          |
| 12 | How will you identify the participants?                                                                            |                          |                          |

|    | Information for participants:                                                                                                            | YES                      | NO                       | N/A                                 |
|----|------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|-------------------------------------|
| 13 | Will you describe the main research procedures to participants in advance, so that they are informed about what to expect?               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| 14 | Will you tell participants that their participation is voluntary?                                                                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| 15 | Will you obtain written consent for participation?                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| 16 | Will you explain to participants that refusal to participate in the research will not affect their treatment or education (if relevant)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| 17 | If the research is observational, will you ask participants for their consent to being observed?                                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| 18 | Will you tell participants that they may withdraw from the research at any time and for any reason?                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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|    |                                                                                                                                                     |                          |                          |                          |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|
| 19 | With questionnaires, will you give participants the option of omitting questions they do not want to answer?                                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 20 | Will you tell participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 21 | Will you debrief participants at the end of their participation, in a way appropriate to the type of research undertaken?                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 22 | If NO to any of above questions, please give an explanation                                                                                         |                          |                          |                          |
|    |                                                                                                                                                     |                          |                          |                          |

|    | Information for participants:                                                                                                                      | YES                      | NO                       | N/A                      |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|
| 24 | Will participants be paid?                                                                                                                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 25 | Is specialist electrical or other equipment to be used with participants?                                                                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 26 | Are there any financial or other interests to the investigator or University arising from this study?                                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 27 | Will the research activity involve deliberately misleading participants in any way, or the partial or full concealment of the specific study aims? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 28 | If YES to any question, please provide full details                                                                                                |                          |                          |                          |
|    |                                                                                                                                                    |                          |                          |                          |

### SECTION F: Anticipated Risks

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                        |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <b>Outline any anticipated risks that may adversely affect any of the participants, the researchers and/or the University, and the steps that will be taken to address them.</b>                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                        |
| 1 | <b>Risks to participants</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                        |
|   | Risk to participants:<br>N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | How you will mitigate the risk to participant:<br>N/A                                                                                                                                                                                                                                                                                                  |
| 2 | If research activity may include sensitive, embarrassing or upsetting topics (e.g. sexual activity, drug use) or issues likely to disclose information requiring further action (e.g. criminal activity), give details of the procedures to deal with these issues, including any support/advice (e.g. helpline numbers) to be offered to participants. Note that where applicable, consent procedures should make it clear that if something potentially or actually illegal is discovered in the course of a project, it may need to be disclosed to the proper authorities |                                                                                                                                                                                                                                                                                                                                                        |
|   | Not applicable. This study involves only anonymized machine sensor data. There are no sensitive, personal, or illegal topics being researched, and no human interactions will take place.                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                        |
| 3 | <b>Risks to the investigator</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                        |
|   | Risk to the investigator:<br><b>Low.</b> The primary risk is physical or cognitive strain from extended computer use (e.g., eye strain, posture issues, or fatigue). Time pressure may also lead to stress during analysis or reporting phases.                                                                                                                                                                                                                                                                                                                               | How you will mitigate the risk to the investigator:<br><br><b>Risks will be mitigated by maintaining an ergonomic working environment, using screen breaks, following a structured time management plan, and taking regular rest intervals.</b>                                                                                                        |
| 4 | <b>University/institutional risks</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                        |
|   | Risk to the University:<br>Potential risks include reputational damage or breach of data handling protocols if data is not securely managed.                                                                                                                                                                                                                                                                                                                                                                                                                                  | How you will mitigate the risk to the University:<br>All data will be handled in full compliance with GDPR and the university's data management policies. Data will be anonymized, stored on secure cloud platforms (e.g., University OneDrive), and deleted after project completion. No identifiable or confidential data will be used or disclosed. |
| 5 | <b>Environmental risks</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                        |

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|  |                                                                                                                                                              |                                                                       |
|  | <p>Risk to the environment:<br/> <b>N/A</b> — The research involves no fieldwork, travel, or physical experimentation that could impact the environment.</p> | <p>How you will mitigate the risk to environment:<br/> <b>N/A</b></p> |

### SECTION G: Feedback, Consent and Confidentiality

If you have identified in section D that there are no participants then enter skip this section and continue to section H.

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | <p><b>Feedback</b><br/>           What de-briefing and feedback will be provided to participants, how will this be done and when?</p>                                                                                                                                                                                                                                                                                                     |
|   | <p><b>Not applicable.</b> No human participants are involved in this study. The research is based entirely on secondary, anonymized data.</p>                                                                                                                                                                                                                                                                                             |
| 2 | <p><b>Informed consent</b><br/>           Describe the arrangements to inform potential participants, before providing consent, of what is involved in participating. Describe the arrangements for participants to provide full consent before data collection begins. If gaining consent in this way is inappropriate, explain how consent will be obtained and recorded in accordance with prevailing data protection legislation.</p> |
|   | <p><b>Not applicable.</b> No direct interaction with participants or data collection from individuals is planned. Therefore, informed consent is not required.</p>                                                                                                                                                                                                                                                                        |
| 3 | <p><b>Confidentiality / Anonymity</b><br/>           Set out how anonymity of participants and confidentiality will be ensured in any outputs. If anonymity is not being offered, explain why this is the case.</p>                                                                                                                                                                                                                       |
|   | <p><b>Not applicable.</b> No participant data is collected. The dataset used is already anonymized, and no identifiable information will be included in any reports or publications.</p>                                                                                                                                                                                                                                                  |

### SECTION H: Data Protection and Storage

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |    |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----|
|   | Does the research activity involve personal data (as defined by the General Data Protection Regulation 2016 “GDPR” and the Data Protection Act 2018 “DPA”)?                                                                                                                                                                                                                                                                                                                                                                                                                                                | YES                      | NO |
| 1 | <p><b>“Personal data”</b> means any information relating to an identified or identifiable natural person (‘data subject’). An identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person. Any video or audio recordings of participants is considered to be personal data.</p>                           | <input type="checkbox"/> | ✓  |
| 2 | NO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                          |    |
|   | Does it involve special category data (as defined by the GDPR)?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | YES                      | NO |
| 3 | <p><b>“Special category data”</b> means sensitive personal data consisting of information as to the data subjects’ –</p> <ul style="list-style-type: none"> <li>(a) racial or ethnic origin,</li> <li>(b) political opinions,</li> <li>(c) religious beliefs or other beliefs of a similar nature,</li> <li>(d) membership of a trade union (within the meaning of the Trade Union and Labour Relations (Consolidation) Act 1992),</li> <li>(e) physical or mental health or condition,</li> <li>(f) sexual life,</li> <li>(g) genetics,</li> <li>(h) biometric data (as used for ID purposes),</li> </ul> |                          | ✓  |

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|---|-------------------------------------------------------------------------------------------------------------|
|   | If YES, provide a description of the special category data and explain why this data needs to be collected: |
| 4 | NO                                                                                                          |

|    | Will data from the research activity (collected data, drafts of the thesis, or materials for publication) be stored in any of the following ways?                                                                                                                                                                                 | YES                                 | NO                                  |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|
| 5  | Manual files (i.e. in paper form)?                                                                                                                                                                                                                                                                                                | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 6  | University computers?                                                                                                                                                                                                                                                                                                             | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 7  | Private company computers?                                                                                                                                                                                                                                                                                                        | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 8  | Home or other personal computers?                                                                                                                                                                                                                                                                                                 | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 9  | Laptop computers/ CDs/ Portable disk-drives/ memory sticks?                                                                                                                                                                                                                                                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 10 | “Cloud” storage or websites?                                                                                                                                                                                                                                                                                                      | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 11 | Other – specify:                                                                                                                                                                                                                                                                                                                  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 12 | For all stored data, explain the measures in place to ensure the security of the data collected, data confidentiality, including details of backup procedures, password protection, encryption, anonymisation and pseudonymisation:                                                                                               |                                     |                                     |
|    | All data will be securely stored in password-protected University Office 365 cloud storage. No personal or sensitive data is collected. Backups will be maintained using the university’s system. No USB devices or external media will be used. Data will be anonymized, encrypted, and deleted after project completion.<br>(th |                                     |                                     |

|    | Data Protection                                                                                                                                                                                                                                    |                                     |                                     |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|
|    | Will the research activity involve any of the following activities:                                                                                                                                                                                | YES                                 | NO                                  |
| 13 | Electronic transfer of data in any form?                                                                                                                                                                                                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 14 | Sharing of data with others at the University outside of the immediate research team?                                                                                                                                                              | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 15 | Sharing of data with other organisations?                                                                                                                                                                                                          | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 16 | Export of data outside the UK or importing of data from outside the UK?                                                                                                                                                                            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 17 | Use of personal addresses, postcodes, faxes, emails or telephone numbers?                                                                                                                                                                          | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 18 | Publication of data that might allow identification of individuals?                                                                                                                                                                                | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 19 | If YES to any question, please provide full details, explaining how this will be conducted in accordance with the GDPR and Data Protection Act (2018) (and/or any international equivalent):                                                       |                                     |                                     |
|    | Project-related data will only be transferred between the researcher and supervisor using encrypted university systems. No external sharing will take place. All data remains anonymous and securely stored, in compliance with GDPR and DPA 2018. |                                     |                                     |
| 20 | List all who will have access to the data generated by the research activity:                                                                                                                                                                      |                                     |                                     |
|    | Kushkumar Patel (Principal Researcher) and Dr. Seena Joseph (Supervisor)                                                                                                                                                                           |                                     |                                     |
| 21 | List who will have control of, and act as custodian(s) for, data generated by the research activity:                                                                                                                                               |                                     |                                     |
|    | Kushkumar Patel                                                                                                                                                                                                                                    |                                     |                                     |
| 22 | Give details of data storage arrangements, including security measures in place to protect the data, where data will be stored, how long for, and in what form.                                                                                    |                                     |                                     |
|    | Data will be stored on the University’s Office 365 OneDrive (cloud-based), protected by password and institutional access. The data will be retained until the project is completed, marked, and archived, after which it will be deleted securely |                                     |                                     |

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|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| 22 | Confirm that you have read the UWTSD guidance on data management (see <a href="https://www.uwtسد.ac.uk/library/research-data-management/">https://www.uwtسد.ac.uk/library/research-data-management/</a> ) | <input checked="" type="checkbox"/> |
| 23 | Confirm that you are aware that you need to keep all data until after your research has completed or the end of your funding                                                                              | <input checked="" type="checkbox"/> |

**SECTION I: Declaration**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                 |            |                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|------------|-----------------------------------|
| <p>The information which I have provided is correct and complete to the best of my knowledge. I have attempted to identify any risks and issues related to the research activity and acknowledge my obligations and the rights of the participants.</p> <p>In submitting this application I hereby confirm that I undertake to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice which is published on the website: <a href="https://www.uwtسد.ac.uk/research/research-ethics/">https://www.uwtسد.ac.uk/research/research-ethics/</a></p> |                                 |            |                                   |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Signature of applicant:</b>  | KUSH PATEL | <b>Date:</b><br><b>30/04/2025</b> |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Director of Studies/Supervisor: |            | <b>Date:</b>                      |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Signature:                      |            |                                   |

**FOR INTERNAL USE ONLY:**

|                               |                               |  |              |
|-------------------------------|-------------------------------|--|--------------|
| <b>Ethical approval given</b> |                               |  |              |
| 1                             | <b>Signature of assessor:</b> |  | <b>Date:</b> |
| 2                             | Name:                         |  |              |
| 3                             | Role:                         |  |              |