INM363 Project Proposal

AI Co-Pilot for Marketers

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1.Introduction and Project Objective

1. Problem Statement

At present, LLMs (Large Language Models) got a massive exposure, not only to the field of NLP (Natural Language Processing) but also got exposure to the whole world. LLMs are trained on enormous amounts of data, which makes them powerful in generating accurate text-based outputs according to user needs. However, it is general and not specific to a particular function or profession. Although there are some pre-trained and fine-tuned large language models for performing tasks well in specific domains like Finance (FinBERT), Science (SCIBERT), Mental Health (MentalBERT) and others, there seems to be a clear gap in use of optimised LLMs for Marketing domain.

The functionalities of large language models are enormous and they can also be used to perform a vast number of tasks. When LLMs are fine-tuned on a specific domain, the performance and accuracy of the model increase by a good margin, which is evident by observing the results of the papers we discussed in later part of the report (Critical Context). It can be beneficial, efficient, and time-saving for professionals. Domain specific fine-tuning also enhances the ability of LLM to understand and generate contents effectively. For marketers, the case is also no different.

Pre-training and fine-tuning LLMs on specific domain, then using them as co-pilots for marketing professionals would give marketers better technical answers to technical marketing tasks compared to general LLMs existing in the market. It would make work efficient and time-saving. Besides, there would be an increased accuracy in completing marketing tasks to a standard that is of value to the marketer relative to existing LLM. It can be the equivalent of having access to very cost-effective marketing resources for smaller companies that cannot afford full-time marketers to help them attract more customers and increase revenue.

1.1. Research Questions
The following questions would be our research question for this project:

- Can LLMs be trained and fine-tuned for marketing domain so that professionals can optimize marketing effectiveness and get answers to critical marketing questions?
- What is difference of performance for different models?
- Can our system generate trendy, creative and innovative marketing ideas?
- Compared to base LLM does the optimised model perform significantly well when it is trained and fine-tuned with domain specific data?

1.2. Objectives
The main objectives of this project would be to pre-train and fine-tune LLM models, BERT and GPT-J with large marketing specific corpus and domain specific dataset then evaluate and compare the result of optimised models with base models. To accomplish our task, it is necessary to gather high quality marketing data and construct large corpus and task specific

dataset. The project would explore different models and would try to find out if our optimization approach produced better result compared to base LLMs or not. The main goal of this project is coming with a solution that would help marketers to in every aspects of their work and would help them save a lot of time.

1.3. Generated Products and Outputs
The following would be generated products and outputs from our project:

- Develop a pre-trained and fine-tuned LLM (BERT and GPT-J) which is optimized to perform well in marketing domain
- Develop large domain-specific corpus and task-specific dataset
- Compare the performance of our model with existing LLM for specified domain
- Generate evaluation scores of the performance of our model
- Discuss future scopes, recommendations, limitation, and risks associated with our project

1.4. Beneficiaries
Our project would mark a step of AI in the field of marketing. The outcome would benefit certain groups. Apart from marketers being the obvious beneficiaries, business owners and organizations would also be benefited. Besides, our project can also be used in the field of research. To summarize, the following group would be beneficiaries of our project:

- Marketers, Startups, Businesses and Organizations
- Researchers focused in the field of Data Science, AI, Natural Language Processing, Computer Linguistics, Marketing and Consumer Behaviour

1.5. Project Scope
Our project focuses in optimizing general LLM available in the market to make it perform well for marketing domain. There is a lack of optimization of LLM for marketing specific task, which leads in leaving us with lack of resources. Within working scope, we plan to construct corpus and dataset for pre-training and fine-tuning our models. Pre-training on large corpus would give our model the chance to learn complex language structure and would give it the ability to acquire synthetic structure which is associated to our domain. Project scope would also include documentation, beneficiaries impact, evaluation metrics report etc. We would be comparing answers generated by our models and evaluate it by involving humans which gives nobility to our project. One of the point out of scope of project would be focusing on a particular branch of marketing, instead of focusing on a particular branch our project deals with marketing as a while, we would be able to address this in future works.

2 Critical Context
To successfully complete our project a planned approach has to be taken and relevant papers and works should be taken into consideration. Although exact similar work and paper was hard to gather, but we review some similar works and approaches which contextualize the project research questions and inform the subsequent choice of methods to be used.

2.1. FinBERT: A Pretrained Language Model for Financial Communications [1]
In this paper, author optimized BERT to perform tasks particularly well in the financial domain. Here initially they collected a large corpus of data and pre-trained the base BERT model with their domain-specific corpus. This allowed BERT to be pre-trained on a corpus of a particular domain. Afterward, they fine-tuned the pre-trained model and conducted

sentiment analysis experiments with financial datasets for sentiment analysis. They conducted their experiment on 3 different data

sets and for all of the experiments they achieved a better result for optimized models compared to the base model. In their paper, they also discussed their fine-tuning process and choice of parameters which we can take into consideration. For fine-tuning purposes, they used the softmax activation function with cross-entropy loss as the loss function. For their experiment, they followed the optimization choices and architectural structure of the paper [2], which is a very crucial point to consider. A few of the other papers that we researched followed the same paper for fine-tuning purposes. This point is a north-worthy point with respect to the project we have in hand.

The lessons from this work are the working structure and sequence which they maintained for optimizing BERT which we would use for our project (pretraining, fine-tuning, and evaluation)

2.2. BioBERT: a pre-trained biomedical language representation model for biomedical text mining [3]

This paper and the approach are very similar to the approach of the paper that we reviewed in the last section. They followed an almost similar approach to pre-train their model on a large domain-specific corpus and fine-tuned their model on task-specific datasets. They followed the optimization choice and architectural structure of the paper [2]. Here the domain that they focused on was biomedical texts. They carried out experiments with different language tasks including question-answering which is one of the objectives of our project. In all of the tasks that they performed, they achieved the best accuracy and score with their optimized-fine-tuned model compared to the base model. For their experiment, they compared models that were pre-trained on different corpus and presented comparative results.

The lessons from this work are very similar to the ones we covered in the last subsection. In both cases, they were able to get good performance results which is a positive sign for the success of our project. Besides, in the BioBERT project, they experimented with various versions of their models with various versions of corpus collected from different sources. Due to limitations of time and resources, this won't be carried out on our project, but this can be a work for future experiments.

2.3. WebGPT: Browser-assisted question-answering with human feedback [4]

Compared to the last two works that we reviewed, this project uses different large language model. Here, the author fine-tuned GPT-3 to make it perform well answering domain specific queries compared to base models. This paper is relevant to our project as we would be using GPT-J which is almost similar in structure and working ability compared to GPT-3 and is considered one of the best available open-source models [5].

Because of difference in structure and architecture of BERT and GPT, fine-tuning approach and process is also different. We can see evidence of this in this paper. Unlike in previous projects of pre-training our models on large language corpus for it to learn about semantic meaning of words, it is not necessary to perform this step for GPT as it is already exposed to wide range of corpus. Here in their project for fine-tuning, 4 main processes are followed, Behaviour Cloning, Reward Modelling, Reinforcement Learning and Rejection Sampling. For evaluation and comparison of their result they mainly relied on human evaluation. They asked question from their testing dataset to base model and modified model, the models generated answers. Then the authors gave human to choose the best answer. Reference where

striped to remove biasness in human evaluation. Based on human voting best model was evaluated. We would use similar approach in our project, as it is difficult to evaluate different answers of language solely based on evaluation matrices as those evaluation techniques would fail to capture the inner meaning of sentence.

2.4. DIALOGPT: Large-Scale Generative Pre-training for Conversational Response Generation [6]

In this paper the author fine-tuned GPT-2 on large Reddit dataset to optimise it for performing well on specified domain. The working steps they followed is similar to the previously discussed paper. Although there is a difference in working parameters and architecture. In their project, they used the base architecture of GPT-2. Besides, they used Mutual Information Maximization to remove the problem of bland and uninformative samples generation. In the paper they also discussed about training of different versions of GPT-2 based on parameter values.

Lastly after pre-training and after performing experiments, human evaluation was carried out to evaluate best generated answers. It was found DIALOGPT performed better in comparison to baseline models.

2.5. AUGESC: Dialogue Augmentation with Large Language Models for Emotional Support Conversation [7]

In this paper, the authors exactly used the model we proposed for this project, GPT-J. In the paper, they fine-tuned GPT-J to make it perform better in simultaneous dialogue generating task. They fine-tuned their dataset for 1 epoch on 100 sampled ESConv dialogue sessions, which they found could lead to a balance between domain adaptation and the generalization to unseen dialogue topics. Their approach is similar to our end goal; hence the detailed implementation of the paper should be taken into consideration.

Similar to previously discussed papers, the evaluation methods which they followed was mainly focused on human evaluation. Besides, for evaluation they also conducted a survey and created a metric based on the survey score. While considering evaluation of their answers consistency, coherence and unsafety measures of generated results were taken into consideration.

2.6. Text Book: Transformers for Natural Language Processing [8]

This text book by Denis Rothman gives us a clear view and discusses about the architecture of transformer-based models. Besides the author describes about fine-tuning and optimization process of LLMs. This book is a good reference of theory and code for fine-tuning LLM. It also gave us an understanding of the inner structure of the models, parameter tunning and working procedure which we can refer while doing the final project.

3 Approaches

Relating to the research question that we mentioned earlier, the main purpose of the project would be to make our model optimised to answer critical marketing related questions. In order to do that we follow different approach to optimise our LLMs (BERT and GPT-J) because of the difference in architecture and working mechanism [9].

3.1. Literature Review

This is the first step that we follow before conducting our main research. We plan to conduct extensive research on papers and projects related to our approach. It is planned to find more related and appropriate papers which we can relate with our project. We also plan to go

thoroughly through all the papers and text books mentioned in the last section. In access to that, it is planned to go through all the 'Related Works' section of all the papers mentioned above. This would give us easy access to related papers and would give us in-depth knowledge with some innovative ideas which we can implement in our project. Apart from that, we want to focus on the recommendation/future works/suggestions section of all the papers that we would gather. By following these approaches, it would be possible to gather extensive knowledge of the project we have in hand.

3.2. Data Collection and Pre-processing

Initially we need to create marketing specified large language corpora to pre-train base BERT model and make it able to generate coherent text. We won't be pre-training GPT-J with corpora as it is already exposed to large corpus and are able to understand language patterns. Referring to 2.1. and 2.2. subsection of this report, we take an approach in creating large language corpora like the mentioned subsections. For this purpose, we plan to form our corpus from marketing related journals. JSTOR [10] has a wide collection of marketing related journals, we would use only those that can be publicly used and downloaded for research purpose. 2.2. subsection took similar approach and collected journals from PubMed for forming corpus. Besides, if required, we would use free to use marketing related book corpus to form large collection of marketing specific corpus. It would be ensured that none of ethics is broken while collecting data. After collection of data, we would convert our data in tokenised form for us to make it suitable for BERT training.

For fine-tuning purpose for both BERT and GPT-J, we need another suitable dataset which would able our model to answer marketing related questions and also generate trendy and innovative ideas. This is a challenge as there are no readymade dataset focused on marketing domain. For that we need a large question and answer dataset. Referring to subsection 2.3. where the authors used question and answer data of Reddit for their domain, we would also take similar approach. We plan to construct dataset with subreddit (Reddit topic) 'marketing' [11]. We would include questions and only answers with most vote associated with that question as the answer to the question. For privacy we would keep identities and personal information anonymous. We split our dataset into training and testing at 90% and 10% ratio respectively.

3.3. Pre-training and Fine-tuning

Initially for training our corpus on BERT base model, we keep few days in hand as the execution takes a bit of time. If possible, we would be accessing City, University of London computers remotely which we are given access to. Instead of choosing parameters randomly, we would be using parameters which performed best for models from our conducted literature review section. For pre-training we would keep learning rate minimum as advised in BERT code and would keep an ideal iteration based on our dataset characteristics. After pre-training we would convert our BERT model to be compatible with PyTorch using transformers library.

For fine-tuning in both the models, we would be using same dataset, although the process would be different as they are of completely different architecture and their working mechanism is also different. The architecture of BERT followed in the paper [12] would be followed. This was the followed architecture of the paper from subsection 2.2. where they dealt with the task of question answering which is also the case for us. Overall following the referred papers, we can have an idea of learning rate, optimizers and other parameter values that we would need to vary while performing fine-tuning approach for BERT. For GPT-J we would be using the fine-tuning mechanism and process as mentioned in the paper of

subsection 2.3., as we are dealing with almost similar problem on dataset of Reddit, the choice of parameters and fine-tuning process mentioned in the paper would be beneficial for us in getting good accuracy. Besides, fine-tuning process for GPT-J is almost similar, the only tweak is the choice of parameter values. We would get more knowledge and idea of the values after completing subsection 3.1., besides we would be experimenting with the hyperparameter values to find an optimal solution.

3.4. Testing, Evaluation and Comparison of Result

After training our model we would test the model by asking unseen questions to it from the 10% data that we kept for testing. As our dataset is from a publicly available data source, the quality of testing data may not be up to the mark. We would double-check manually if the testing data question are suitable for checking the novelty of our models.

After that, we would perform two evaluation tests, automatic and manual (domain expert) evaluation. For automatic evaluation we refer to the work in the paper [13], where they used evaluation techniques like BLEU, Distinct-1/2, and Knowledge Recall/Precision/F1 to automatically create evaluation metrics and compare the model-generated outcome with the expected outcome.

For question-answering and text-generation purposes solely relying on the results of the automatic evaluation would not be ideal. Referring to the work of the paper of subsection 2.3. we do manual evaluation by asking questions to a few marketing domain experts maintaining the ethics form rules and giving them options to choose the best answer according to them. We give them 5 options (Human-generated Reddit answer from the actual testing dataset, answer generated by base BERT, answer generated by optimized BERT, answer generated by base GPT-J and answer generated by optimized GPT-J) stripping the answer reference to remove biases and shuffling the options across the questions and allow them to choose a suitable answer. We would evaluate the overall performance and come up with a comparison result after this step. Thus, we would be able give final verdict and compare the overall performance of our model compared to base model

Referring our Approach to Research Questions

We check if our approach is correct by referring to our research question and try to find out if our approach answers the questions that we have in hand:

- Can LLMs be trained and fine-tuned for marketing domain so that professionals can optimize marketing effectiveness and get answers to critical marketing questions?
  - We would evaluate our model's performance with domain expert, which would give us indication of the performance of our model and answer to this question.
- What is difference of performance for different models?
  - After automatic and manual evaluation, we would get performance report.
- Can our system generate trendy, creative and innovative marketing ideas?
  - We fine-tune our models using Reddit data, it is expected to generate trendy, creative and innovative outputs
- Compared to base LLM does the optimised model perform significantly well when it is trained and fine-tuned with domain specific data?
  - After evaluation, we would be able to address and answer this question as well

4 Work Plan

To successfully complete this project we divide our working phases in three parts, Preparation Phase, Implementation and Documentation. We allocate 26th June-17th July for

preparation phase, 17th July-4th September as implementation phase and lastly 14th August-30th September for documentation. In preparation phase, literature review, data collection and preparation stage is conducted. In implementation phase, model is implemented and evaluation is carried out and in documentation phase, we write document, submit draft and final version to supervisor. More detailed graphical presentation is given below:

Tasks	Calendar Weeks Starting (Monday- Week Starting Day)													
	26-Jun	03-Jul	10-Jul	17-Jul	24-Jul	31-Jul	07-Aug	14-Aug	21-Aug	28-Aug	04-Sep	11-Sep	18-Sep	30-Sep
PREPARATION PHASE	■	■	■	■										
Literature Search	▨	▨												
Literature Review	▨	▨												
Reviewing Text Book	▨	▨												
Overview of Findings			▨											
Take Note of Finding			▨											
Preparing Corpus		▨	▨											
Preparing Reddit Data		▨	▨											
Get Manual Overview of Both Dataset		▨	▨											
IMPLEMENTATION				■	■	■	■	■	■	■	■			
BERT pre-training				▨	▨	▨								
BERT fine-tuning						▨	▨							
BERT testing/eval							▨							
GPT-J fine-tuning					▨	▨	▨							
GPT-J testing/eval								▨						
Compare Results								▨						
Contact Experts								▨	▨					
Prepare eval questions								▨	▨					
Expert Feedback- I									▨	▨	▨			
Expert Feedback- II										▨	▨			
DOCUMENTATION PHASE								■	■	■	■	■	■	■
Write Draft Report								▨	▨	▨				
Submit First Draft											▨			
Get Feedback											▨			
Write Final Draft											▨	▨	▨	▨
Submit Final Version													▨	▨

5 Risks

Risk is a part of project and for our case it is no different. We might face challenges and risk while conducting the project. An overview of associated risk, its likelihood, consequences, potential impact and planned mitigation strategy to tackle it is described below:

Risk	Likelihood (1-5)	Consequence (1-5)	Potential Impact (1-25)	Mitigation Strategy
Unable to construct dataset	3	5	15	Look for other sources, find if City University can provide any relevant sources/resources.
Too much time to train/fine-tune	3	3	9	Use optimised code and try to utilize City University computer and allocated resources.
Unacceptable Results	2	4	8	Take different training/fine-tuning approach. Talk to supervisor for further advice,
Loss of Motivation	1	5	5	Highly unlikely of losing my motivation. Proper dates would be followed to avoid burnouts.
System failure/Data Loss	2	5	10	Every 3 days work is planned to upload in clouds. Git repository would also be maintained
Fine-tuning and pre-training are difficult	3	4	12	Cary extensive literature review, discuss the issue with supervisor. Follow one step at a time.
Pausation due to unavoidable circumstances	2	4	8	For each task sufficient time is allocated. This would give us scope to avoid such condition.

6 References

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7 Ethics Review

Research Ethics Review Form: BSc, MSc and MA Projects

Computer Science Research Ethics Committee (CSREC)

http://www.city.ac.uk/department-computer-science/research-ethics

Undergraduate and postgraduate students undertaking their final project in the Department of Computer Science are required to consider the ethics of their project work and to ensure that it complies with research ethics guidelines. In some cases, a project will need approval from an ethics committee before it can proceed. Usually, but not always, this will be because the student is involving other people ("participants") in the project.

In order to ensure that appropriate consideration is given to ethical issues, all students must complete this form and attach it to their project proposal document. There are two parts:

PART A: Ethics Checklist. All students must complete this part.
The checklist identifies whether the project requires ethical approval and, if so, where to apply for approval.

PART B: Ethics Proportionate Review Form. Students who have answered "no" to all questions in A1, A2 and A3 and "yes" to question 4 in A4 in the ethics checklist must complete this part. The project supervisor has delegated authority to provide approval in such cases that are considered to involve MINIMAL risk. The approval may be ***provisional*** *– identifying the planned research as* likely to involve MINIMAL RISK. In such cases you must additionally seek ***full approval*** from the supervisor as the project progresses and details are established. ***Full approval*** must be acquired in writing, before beginning the planned research.

A.1 If you answer YES to any of the questions in this block, you must apply to an appropriate external ethics committee for approval and log this approval as an External Application through Research Ethics Online - https://ethics.city.ac.uk/			*Delete as appropriate*
1.1	Does your research require approval from the National Research Ethics Service (NRES)? *e.g. because you are recruiting current NHS patients or staff?* *If you are unsure try - https://www.hra.nhs.uk/approvals-amendments/what-approvals-do-i-need/*		**NO**
1.2	Will you recruit participants who fall under the auspices of the Mental Capacity Act? *Such research needs to be approved by an external ethics committee such as NRE or the Social Care Research Ethics Committee - http://www.scie.org.uk/research/ethics-committee/*		**NO**
1.3	Will you recruit any participants who are currently under the auspices of the Criminal Justice System, for example, but not limited to, people on remand, prisoners and those on probation? *Such research needs to be authorised by the ethics approval system of the National Offender Management Service.*		**NO**
A.2 If you answer YES to any of the questions in this block, then unless you are applying to an external ethics committee, you must apply for approval from the Senate Research Ethics Committee (SREC) through Research Ethics Online - **https://ethics.city.ac.uk/**			*Delete as appropriate*
2.1	Does your research involve participants who are unable to give informed consent? *For example, but not limited to, people who may have a degree of learning disability or mental health problem, that means they are unable to make an informed decision on their own behalf.*		**NO**

2.2	Is there a risk that your research might lead to disclosures from participants concerning their involvement in illegal activities?	**NO**
2.3	Is there a risk that obscene and or illegal material may need to be accessed for your research study (including online content and other material)?	**NO**
2.4	Does your project involve participants disclosing information about special category or sensitive subjects? *For example, but not limited to: racial or ethnic origin; political opinions; religious beliefs; trade union membership; physical or mental health; sexual life; criminal offences and proceedings*	**NO**
2.5	Does your research involve you travelling to another country outside of the UK, where the Foreign & Commonwealth Office has issued a travel warning that affects the area in which you will study? *Please check the latest guidance from the FCO - http://www.fco.gov.uk/en/*	**NO**
2.6	Does your research involve invasive or intrusive procedures? *These may include, but are not limited to, electrical stimulation, heat, cold or bruising.*	**NO**
2.7	Does your research involve animals?	**NO**
2.8	Does your research involve the administration of drugs, placebos or other substances to study participants?	**NO**
A.3 If you answer YES to any of the questions in this block, then unless you are applying to an external ethics committee or the SREC, you must apply for approval from the Computer Science Research Ethics Committee (CSREC)		*Delete as appropriate*

	through **Research Ethics Online - https://ethics.city.ac.uk/** **Depending on the level of risk associated with your application, it may be referred the Senate Research Ethics Committee.**	
3.1	Does your research involve participants who are under the age of 18?	**NO**
3.2	Does your research involve adults who are vulnerable because of their social, psychological or medical circumstances (vulnerable adults)? *This includes adults with cognitive and / or learning disabilities, adults with phys disabilities and older people.*	**NO**
3.3	Are participants recruited because they are staff or students of City, University of London? *For example, students studying on a particular course or module.* *If yes, then approval is also required from the Head of Department or Programme Director.*	**NO**
3.4	Does your research involve intentional deception of participants?	**NO**
3.5	Does your research involve participants taking part without their informed consent?	**NO**
3.5	Is the risk posed to participants greater than that in normal working life?	**NO**
3.7	Is the risk posed to you, the researcher(s), greater than that in normal working life?	**NO**

A.4 If you answer YES to the following question and your answers to all other questions in sections A1, A2 and A3 are NO, then your project is deemed to be of MINIMAL RISK. **If this is the case, then you can apply for approval through your supervisor under PROPORTIONATE REVIEW. You do so by completing PART B of this form.** **If you have answered NO to all questions on this form, then your project does not require ethical approval. You should submit and retain this form as evidence of this.**		*Delete as appropriate*
4	Does your project involve human participants or their identifiable personal data? *For example, as interviewees, respondents to a survey or participants in testing.*	**YES**

PART B: Ethics Proportionate Review Form

If you answered YES to question 4 and NO to all other questions in sections A1, A2 and A3 in PART A of this form, then you may use PART B of this form to submit an application for a proportionate ethics review of your project. Your project supervisor has delegated authority to review and approve this application under proportionate review. You must receive final approval from your supervisor in writing before beginning the planned research.

However, if you cannot provide all the required attachments (see B.3) with your project proposal (e.g. because you have not yet written the consent forms, interview schedules etc), the approval from your supervisor will be *provisional*. You **must** submit the missing items to your supervisor for approval prior to commencing these parts of your project. Once again, you must receive written confirmation from your supervisor that any provisional approval has been superseded by with *full approval* of the planned activity as detailed in the full documents. **Failure to follow this procedure and demonstrate that final approval has been achieved may result in you failing the project module.**

Your supervisor may ask you to submit a full ethics application through Research Ethics Online, for instance if they are unable to approve your application, if the level of risks associated with your project change, or if you need an approval letter from the CSREC for an external organisation.

B.1 The following questions must be answered fully. **All grey instructions must be removed.**		*Delete as appropriate*
1.1.	Will you ensure that participants taking part in your project are fully informed about the purpose of the research?	**YES**
1.2	Will you ensure that participants taking part in your project are fully informed about the procedures affecting them or affecting any information collected about them, including information about how the data will be used, to whom it will be disclosed, and how long it will be kept?	**YES**
1.3	When people agree to participate in your project, will it be made clear to them that they may withdraw (i.e. not participate) at any time without any penalty?	**YES**

1.4	Will consent be obtained from the participants in your project?	**YES**
	Consent from participants will be necessary if you plan to involve them in your project or if you plan to use identifiable personal data from existing records. "Identifiable personal data" means data relating to a living person who might be identifiable if the record includes their name, username, student id, DNA, fingerprint, address, etc.	
	If YES, you must attach drafts of the participant information sheet(s) and consent form(s) that you will use in section B.3 or, in the case of an existing dataset, provide details of how consent has been obtained.	
	You must also retain the completed forms for subsequent inspection. Failure to provide the completed consent request forms will result in withdrawal of any earlier ethical approval of your project.	
1.5	Have you made arrangements to ensure that material and/or private information obtained from or about the participating individuals will remain confidential?	**YES**

B.2 If the answer to the following question (B2) is YES, you must provide details		*Delete as appropriate*
2	Will the research be conducted in the participant's home or other non-University location?	**NO**
	*If **YES**, you must provide details of how your safety will be ensured.*	

B.3 Attachments **ALL of the following documents MUST be provided to supervisors if applicable.** **All must be considered prior to final approval by supervisors.** **A written record of final approval must be provided and retained.**		*YES*	*NO*	*Not Applicable*
Details on how safety will be assured in any non-University location, including risk assessment if required (see B2)				Not Applicable
Details of arrangements to ensure that material and/or private information obtained from or about the participating individuals will remain confidential (see B1.5) *Any personal data must be acquired, stored and made accessible in ways that are GDPR compliant.*		Described below in B.3.1 subsection		
Full protocol for any workshops or interviews**		Described below in B.3.1 subsection		
Participant information sheet(s)**		Described below in B.3.1 subsection		
Consent form(s)**		Described below in B.3.1 subsection		

Questionnaire(s)** *sharing a Qualtrics survey with your supervisor is recommended.*	Described below in B.3.1 subsection		
Topic guide(s) for interviews and focus groups**	Described below in B.3.1 subsection		
Permission from external organisations or Head of Department** *e.g. for recruitment of participants*	Described below in B.3.1 subsection		

***If these items are not available at the time of submitting your project proposal, then **provisional approval** can still be given, under the condition that you must submit the final versions of all items to your supervisor for approval at a later date. **All** such items **must** be seen and approved by your supervisor before the activity for which they are needed begins. Written evidence of **final approval** of your planned activity must be acquired from your supervisor before you commence.*

B.3.1 Ethic Form Part B: Description

For our research, we would use domain specific expert for evaluation of result. We would present them with question and 5 answer options to choose from. Our model evaluation and comparation would be done based on this. No personal data would be taken and their preference and answer voting would remain confidential and anonymous.

Rest of the ** included texts are applicable for me but at this early stage I am not prepared with the asked requirements in the above form. As my project progresses, I would be able to form description and details to all the points mentioned above and submit it to my supervisor

Changes

If your plans change and any aspects of your research that are documented in the approval process change as a consequence, then any approval acquired is invalid. If issues addressed in Part A (the checklist) are affected, then you must complete the approval process again and establish the kind of approval that is required. If issues addressed in Part B are affected, then you must forward updated documentation to your supervisor and have received written confirmation of approval of the revised activity before proceeding.

Templates for Consent and Information

You must use the templates provided by the University as the basis for your participant information sheets and consent forms. You **must** adapt them according to the needs of your project before you submit them for consideration.

Participant Information Sheets, Consent Forms and Protocols must be consistent. Please ensure that this is the case prior to seeking approval. Failure to do so will slow down the approval process.

We strongly recommend using Qualtrics to produce digital information sheets and consent forms.

Further Information

http://www.city.ac.uk/department-computer-science/research-ethics

https://www.city.ac.uk/research/ethics/how-to-apply/participant-recruitment

https://www.city.ac.uk/research/ethics