UNIVERSITY OF TWENTE.

Computer & Information Science (CIS) (NIEUW CONCEPT)

APPLICATION FOR ETHICAL REVIEW

Application nr:		**Intro form:**	2 - Introduction
Researcher:		**Middle form:**	3 - Computer & Information Science (CIS) (NIEUW CONCEPT)
Supervisor:		**Outro form:**	1 - Submission
Reviewer:			
Status:			
Date of application:			
Application version:			

0. GENERAL

0.1. Personal details

Student/employee number:
Initials:
First name:
Last name:
Email:
Department:
Faculty:
Education:

0.2. Project title*

0.3. Summary*

Please provide a clear and concise description of your research including rationale (background), objective (aim), design and methods.

0.4. Start date (estimated) and end date (estimated) for your research project*

From date

To date

0.5. If additional researchers (students and/or staff) will be involved in carrying out this research, please name them: [Please include full name and email]

Full name	Email

0.6. In which context will you conduct this research?

- ○ Bachelor's thesis
- ○ Master's thesis
- ○ PhD project/AIO/PDEng
- ○ Academic research conducted by a faculty member
- ○ Other

Please explain the context of research*

0.6.1. Please select your supervisor (if applicable)

0.7. Please select an ethics committee

Computer & Information Science (CIS) (NIEUW CONCEPT)

1. GENERAL

1.1. PRE-ADVICE: Did you already consult an ethics adviser about this request?*

Create and I-Tech students can contact the create-itech-ethics team. For others, see the website of EC-CIS for a list of available advisers.

- ○ Yes
  - Please indicate the contents of the advice and who provided it.
- ○ No

1.2. PRIVACY, GDPR, AND POSSIBLE NEED FOR DPIA: Does the research include any possible access to, gathering, use, or publication of data that can be traced back to specific individuals directly or, for instance, by combining data from multiple sources? Or is it possible that you will accidentally access or publish Personal Identifiable Information (PII)?*

Consider carefully what can be PII – for example, audio and video recordings are personally identifiable as well.

Make sure to comply with the General Data Protection Regulation (GDPR) and register the processing of any personal data through the GDPR register. Consent for processing personal data should be asked explicitly, separate from consent for participation in the research. See the consent form template for guidance.

The GDPR demands, among others, a clearly described goal, a legal basis, data minimization, security measures and a maximum retention period. More guidance on the use of personal data in research can be found here and in the FAQ on the EC-CIS website.

In some cases, a full Data Protection Impact Assessment might be necessary; see https://www.utwente.nl/en/bms/datalab/research-data-and-gdpr/dpia/ for more information and https://www.utwente.nl/en/cyber-safety/privacy/pre dpia form for a quick scan whether a DPIA is needed.

- ○ Yes, and we follow the rules on processing personal data, including acquiring explicit consent for processing PII (besides possibly the consent for participating in research) and including a necessary GDPR registration.
- ○ Yes, but this only concerns the signed consent forms with name and signature, and for these, we follow the rules on processing personal data according to the GDPR.
- ○ No

1.3. RESEARCH DOMAIN: Regarding the nature of your research, does one or more of the following statements apply to your research?

- o **the research is in a potentially medical domain such as illness, assessment and diagnosis, prevention, cure, or care**
- o **the research addresses a health outcome**
- o **the research gathers health data**
- o **the research involves a hospital or other medical setting**
- o **the research may be potentially medical for some (other) reason***

If medical research and human subjects are involved, you may need to apply to a medical research ethics committee (MREC). For more information, please contact Research Support TechMed Centre

- ○ No, the research is not medical, health-related, or close-to-medical in any way whatsoever.
- ○ Yes, one or more of the above apply to the research
  - Please explain the nature of the research and why no review of an MREC is needed. If an MREC has issued a non-WMO statement for the project, please include this information as well.
- ○ I am uncertain whether the above applies to my research
  - Please explain the nature of the research and why no review of an MREC is needed. If an MREC has issued a non-WMO statement for the project, please include this information as well.

2. HUMAN RESEARCH PARTICIPANTS

2.1. HUMAN PARTICIPANT RESEARCH: Does the research include

a) active involvement of human research participants during the research, and/or

b) measurements from or about participants or people who are present at a certain place at a certain time, and/or

c) gathering responses in interviews, surveys or questionnaires? *

Regarding interviews, sometimes researchers are uncertain whether their interview with an expert or client falls under “research with human participants”. The FAQ on the EC-CIS website contains some guidelines in that respect.

- ○ No
- ○ Yes, but only interview experts, in their role as professional, on their expertise
  - I meet the following conditions:
  - a) the interviewees are not themselves the subject of research, they are experts that advise me on aspects of the target population of my work
  - b) I guarantee informed consent by the participant, and
  - c) I adhere to current standards of data management
- ○ Yes, my research falls under "research with human participants”

2.1.1. Please describe how you will inform and ask for consent from your interviewees.*

2.1.2. If applicable, please upload your consent form and information letter as PDF

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2.2. RESEARCH POPULATION: Please provide a brief description of the intended research population, including inclusion and exclusion criteria, number of participants, and recruitment strategies.*

"Research population" covers all the individuals and organizations acting as sources for your data collection and other research and design work, including participants, respondents, subjects in experiments, informants, co-designers, interviewees, and people to be observed. For more on what should be included here, see FAQ.

2.3. LACK OF CAPACITY TO CONSENT: Do you have participants who are formally NOT able to give informed consent?*

Able to give informed consent: adult, not cognitively impaired, not otherwise incapacitated. Can reasonably be said to fully understand the terms of their participation and potential risks associated with it, and are also legally considered able to give informed consent (in Dutch: "wilsbekwaam").

- ○ No, all participants have the capacity to consent
- ○ Yes, we include people who lack the capacity to consent

2.4. VULNERABLE PARTICIPANTS: Does your research target vulnerable participants such as focusing on specific ethnic groups, people in another country, minors (<16 years), people with physical or cognitive impairments (regardless of their capacity to consent), people under institutional care (e.g., nursing homes, hospitals, prisons), or any other particular group that may be more vulnerable than other people in the general population?*

Note that targeting vulnerable participants can be a good thing – it is important to have everyone benefit from our research – as long as you take their vulnerability into account in an appropriate way.

- ○ Yes
- ○ No

2.5. POWER RELATIONS: Does your research target participants somehow dependent on, or in a subordinate position to the researcher (e.g., students or relatives)?*

Participants who are in any dependent or unequal relationship with the researcher or research supervisor (e.g., students or employees of the researcher or the research supervisor) may also be regarded as a vulnerable group. If your study will involve such participants, it is essential for you to guard against possible adverse consequences of this situation (e.g., students having the impression or fear of staff members assigning lower grades to the coursework of students because they have refused to participate in a research project). This can for example be achieved by ensuring that participants will remain anonymous to the individuals concerned or by requesting permission to add the data to the research only after the grades have been assigned. Also in such settings it is more important to ensure that participants have a good alternative to participating.

- ○ Yes
- ○ No

2.6. APPROACH TO ETHICS ISSUES ARISING FROM SELECTION OF THE POPULATION: Please elaborate in what way you include participants that are vulnerable, do not have the capacity to consent, or are in an unequal relation to you, and how you will take this into account in your plans. Take into account your answers to the previous questions in this section.*

Please explain why the inclusion of these participants is necessary/right, how you will deal with issues arising from their inclusion, and which measures you will take to protect their interests, both regarding their ability to give active, informed, and voluntary consent and regarding any other vulnerabilities.

3. RESEARCH PROCEDURE AND RISKS

3.1. RESEARCH TYPES: Which of the following research types do you employ in your research?*

Multiple answers are possible.

- ☐ Interviewing and surveys: paper/online questionnaires, surveys, face-to-face or online interviews, focus group.
- ☐ Field research in a natural setting: observations, contextual interviews, automated data collection.
- ☐ Individual or group design work: e.g., codesign worksho.
- ☐ Participating in non-experiment activity: can be a formative evaluation of prototypes, but, more in general, providing artificial tasks, including triggering stimuli and tasks to elicit observable behaviour and responses, measured with, e.g. observations, interviews, and manual or automated data collection.
- ☐ Participating in a formal experiment: asked to perform a set task, respond to predefined stimuli, measure behaviour and outcomes.
- ☐ Other
  Give a short description.

3.2. CONTEXT OF REAL-LIFE ACTIVITIES: Do the activities asked of the participants include activities in a real-life setting?*

E.g., observation of daily work activities; measuring behaviour in daily life, work, sports or school setting.

- ○ Yes
- ○ No

3.3. MATERIALS, PROTOTYPES AND DESIGNS: Do the activities include interaction with a prototype, design, mockup, product, interaction technology, etc.?*

- ○ Yes
- ○ No

3.4. ASSIGNING TASKS TO PARTICIPANTS: Do the research procedures include activities performed specifically for the sake of the research?*

These may include tasks, assignments, and guided activities with or without a prototype (e.g., play a game; do a design task; role-play a situation; hold a scripted conversation; interact with a prototype; respond to presented pictures or other stimuli). If you only carry out an interview, or passively measure human activity (e.g., using environmental sensing), answer “No”.

- ○ Yes
- ○ No

3.5. LOCATION: Where will the research activity take place?*

E.g., public space, lab, user's home, workplace, online.

3.6. TIME INVESTMENT: How much time will each participant spend?*

What is the number of sessions/meetings in which each will participate and the time per session/meeting? Ethically relevant because a too-large time investment could be inappropriate.

3.7. DESCRIPTION OF RESEARCH PROCEDURE: What is the research procedure, in terms of setting, tasks, activities, content, and stimuli?*

Construct your explanation including the elaboration to the preceding questions in this section.

3.8. MEASURES: What measurements, recording tools, discussion topics will you employ?*

Please describe succinctly which sensors and recording devices will be used and the type of behaviour/communication that will be observed, topics/questions that participants will be asked to address, and other data that will be recorded, with the researcher present or absent, in relation to the research procedure that you described earlier.

E.g., interview responses on certain topics, surveys, automated measurements, self-reports, observational notes, recordings, and other sources of data. These measures may be taken with the researchers present (e.g interview), or with the researcher absent (e.g. diary study or experiment recordings with the researcher remaining in a different room).

3.9. DOCUMENTS ON RESEARCH PROCEDURE: If you have any documents or images that can give extra information on the research set-up (e.g., tasks, measurements), please upload as PDF.

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3.10. RISK OF ADVERSE EFFECTS: Is there a risk for adverse (or: negative) effects of the research for certain participants, and how do you deal with these risks?*

Explanation of adverse effects, screening and possible mitigations can be found in the FAQ.

- ○ No
- ○ Yes
  Please explain what are the risks of adverse effects (or why are there no such risks); explain your screening, monitoring, mitigation, and break-off procedures; how do you ensure that both researcher and participant can be considered competent to deal with the risk.
- ○ Uncertain
  Please explain what are the risks of adverse effects (or why are there no such risks); explain your screening, monitoring, mitigation, and break-off procedures; how do you ensure that both researcher and participant can be considered competent to deal with the risk.

3.11. BURDEN TO THE PARTICIPANT: Are there other short-term or long-term burdens and/or risks to the participants? *

Consider burdens and risks such as physical and psychological stress, inconvenience or discomfort beyond the normal experience of everyday life, related to your research.

- ○ No
- ○ Yes
  - Please elaborate and explain how these burdens/risks will be mitigated. Mitigations might include monitoring, defining criteria for discontinuing the research because of major discomfort (“stop protocol”), providing debriefing, or other facilities.
- ○ Uncertain
  - Please elaborate and explain how these burdens/risks will be mitigated. Mitigations might include monitoring, defining criteria for discontinuing the research because of major discomfort (“stop protocol”), providing debriefing, or other facilities.

3.12. ACCIDENTAL FINDINGS: Does the method used allow for making an accidental, diagnostic finding that the experimental participant might have to be informed about?*

Some research methods can lead to accidental discoveries that may be of vital importance to the subject, such as an irregular heartbeat on an ECG. If so, a clause should be included in the informed consent, which outlines an exact procedure to be followed in such a case. For instance, whether the subject will be informed about such a result.

- ○ No, the method does not allow for this possibility
- ○ Yes
  - Please explain
- ○ Uncertain
  - Please explain

4. (DE-)BRIEFING, DECEPTION & CONSENT PROCEDURE

4.1. BRIEFING. Will you inform potential research participants (and/or their legal representatives in case of legally non-competent participants) completely about the aims, activities, burdens, and risks (such as to their health and well-being) of the research and other relevant information before they decide to take part in the research? How will you do this?*

For information on why and how to inform your participants, see FAQ.

- ○ Yes, participants are fully briefed beforehand
- ○ No, participants are not briefed beforehand
- ○ Participants are briefed, but in an incomplete manner (important information is withheld)

4.2. Please explain*

Information that you withhold: which and why; how you mitigate any risks / consequences of that during participation. Information that you provide: summarize how you will provide the information; attach the relevant documents with that information to this request.

4.3. If applicable, upload your information letter or screenshot as a PDF.

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4.4. INFORMATION ON WITHDRAWAL OF CONSENT. Will you inform potential research participants (and/or their legal representatives in case of legally non-competent participants) clearly that they can withdraw from the research at any time without explanation/justification?*

More explanation in the FAQ.

- ○ Yes
- ○ No
  - Please explain

4.5. DECEPTION. Will you use any Deception in the research procedure? How, and why?*

Deception is defined as intentionally providing inaccurate information to the subject about the true nature of the study and what is expected from them (in contrast to withholding information, as in the previous question). Examples include using covert observation methods, observing types of behaviour other than those announced beforehand, or intentionally misinforming participants about specific aspects of the study or the technology involved. Although deception can be necessary to avoid socially desirable answers or other forms of bias, it also goes against the principle of active, informed consent. It should, therefore, be applied only when the knowledge sought cannot be obtained in any other way. Deception is never allowed concerning information about the possible risks and burdens that are linked to participation. Deception is only allowed if there is no possibility of answering the research question without deception.

- ○ No, we will not use any deception
- ○ Yes, we will use deception

4.5.1. Does any deception regarding risks take place?*

Note that deception is never allowed concerning information about the possible risks and burdens that are linked to participation.

- ○ Yes
- ○ No

4.5.2. Please explain the nature of the deception and why it is justified*

4.5.3. Are participants offered, immediately after participation, the opportunity to retroactively withdraw their initial consent?*

If deception cannot be avoided, participants should be provided with information about the true nature of the research immediately after their participation is completed. Such debriefing should allow participants to confirm/withdraw their initial consent (and hence any data collected from their participation so far).

- ○ Yes
- ○ No
  - Please explain why this is justified

4.6. DEBRIEFING: Will the research procedure involve a debriefing after participation, and how will you do this?*

For information on why and how to inform your participants after participation, see FAQ.

- ○ Yes
  - Please explain your debriefing procedures
- ○ No

4.7. FREEDOM TO PARTICIPATE: Are the participants completely free to participate in the research and to withdraw from participation whenever they wish and for whatever reason?*

For information on the freedom to participate and to withdraw from participation, see FAQ.

- ○ Yes, and we clearly communicate this to them
- ○ No, or not entirely
  - Please explain
- ○ Uncertain
  - Please explain

4.8. DIRECT CONSENT OR PROXY CONSENT: Who will provide the consent?*

Please note that not all human beings are capable of consent. Individuals with the capacity or competence to consent:

- Are 16 years or older (adult);
- Have the capacity to make choices about a proposed course of action;
- Know about the risks, benefits and alternatives;
- Understand that consent is 'voluntary and continuing permission';
- Understand that consent 'can be withdrawn at any time'.

For information on who should give consent in case of research with minors of incapacitated adults, see FAQ.

- ○ Participant (no legal representative will separately be informed)
- ○ Legal representative
- ○ Both participant and a legal representative
- ○ Participant, but legal representative will additionally be informed
- ○ No consent will be obtained
  - Please explain

4.9. TYPE OF CONSENT: Which type of consent will you use?*

The formality and reliability of the (documentation of) obtained consent partially relate to the severity of the ethical issues involved in the research. See FAQ for more explanations of possible forms for obtaining consent.

- ○ Signed, written consent form prior to participation
  - Please upload the form
- ○ Active, non-anonymous online consent prior to participation
  - Please upload a document describing the exact method and text of consent
- ○ Active, anonymous online consent prior to participation
  - Please upload a document describing the exact method and text of consent
- ○ Oral, non-recorded consent prior to participation
- ○ Oral, recorded consent prior to participation
- ○ Passive/tacit consent (opt-out)
  - Please explain
- ○ Other
  - Please explain

4.9.1. Please upload supportive information (in PDF)*

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4.9.2. If applicable, please upload supportive information (in PDF)*

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4.10. CONSENT FOR FUTURE USE: Will you keep and reuse the newly collected data for future research, and do you obtain adequate consent for this?*

- ○ No, I will only use the data for this research
- ○ Yes, I may keep and reuse the data in future research, and I do obtain explicit consent
- ○ Yes, I may keep and reuse the data in future research, but do NOT obtain separate consent for this

4.11. PUBLICATION OF THE DATA: Will you publish (some of) the newly collected data, and do you obtain adequate consent for this?*

- ○ No, I will not make the data publicly available
- ○ Yes, I will make (some of) the data publicly available, and I do obtain explicit consent
  - 💬 Please elaborate on what data you will publish

4.12. REWARDS: Will participants receive any rewards, incentives or payments for participating in the research?*

💬 Participants may be offered proportional compensation. If you intend to use incentives/payments, keep in mind that such rewards should be modest in order to avoid enticing individuals to participate.
Some forms of reward that have been used include:

- travel expenses to a specified maximum
- voucher of specified value
- lottery amongst participants to win prize of specified nature and value
- financial reward: amount per activity/time
- no reward

- ○ No, the participants will not receive any reward
- ○ Yes, the participants will receive a reward
  - 💬 Please elaborate

5. DATA MINING

5.1. DATA ACQUISITION. Will the research collate existing data into new datasets, or reuse/merge/aggregate existing and/or new datasets?*

💬 Examples of datasets: Web crawls for any data type (text or images of any type, Web pages), social media (posts, blogs, art), software code in public repositories, sets of documents or files, datasets from prior research projects, benchmark datasets. The data can have a temporal aspect (live measurements) or not (static measurements).

- ○ Yes
- ○ No

5.2. RIGHTS OF USE. List all data sets and their sources and explain for each data set why this data (whether public, semi-public, or private) can be collected and used for research purposes.* *

Do the data platform owner and the person whose data it is allow (opt-in or opt-out) collection of this data? Is any part of the data protected by copyright or terms/conditions of use, or is data of a personal nature, regardless of whether it is public?

Examples of use rights restrictions: Digital art by contemporary artists, even though made public on the Web in some form as part of catalogues or previews, may be protected by copyright. Computer software (code) is protected by software licenses. Semi-private data collected while logged in as a registered user on a social platform may be subject to the terms and conditions of use of that specific platform, so permission for use must be secured from the owner of the platform. Data of a personal nature is that from which a person's profile, opinions, or preferences can be put together and linked to their identity.

Please elaborate: Explain, for each data set, why this data can be collected and used for research purposes.

Data set	Source	Is it public, semi-public, or private

5.3. KNOWLEDGE DISCOVERY FROM DATA. Will the research analyse datasets for novel insights, combine/fuse/aggregate the data, or mine the data to extract higher-level knowledge?*

By such analyses, there can be risks of de-anonymisation of individuals or organisations, or of exposing or outing their opinions, personal preferences, location, situation, context, which may cause them harm. In case there is a risk of accidental diagnostic findings, outline an exact procedure to be followed, for instance, whether the subject is to be informed about such a result.

- ○ No
- ○ Yes

  Please elaborate; Explain whether the knowledge acquired incurs any risks to any person or organisation. Risks may include, for example, accidental, diagnostic findings that people might have to be informed about, or profiling that leads to prosecution or unfair treatment.

5.4. PUBLISHING DATA OR KNOWLEDGE. Will new datasets or new knowledge be published or reported in any form? * *

Publication includes making data or knowledge public on the Web or semi-public on any platform, passing it as training data to an AI model (which may cause downstream effects if the AI is used), or reporting the knowledge in any form.
If the data is published, consider its implications for filling out the section on AI as well, since others may be training AI on the data that you published. Explanation of computational methods and data sources that the results were obtained by contribute to higher level of transparency and to high scientific standards.

- ○ No
- ○ Yes
  - Please elaborate; to whom will they be available, under what licenses, and for what purposes? Will the publication of results be accompanied by the description of data sources and data processing techniques used to create the results?

6. ARTIFICIAL INTELLIGENCE

6.1. ARTIFICIAL INTELLIGENCE: Will the research contribute towards, use, develop, train or deploy AI components?*

- ○ No
- ○ Yes

6.2. DATA / LABEL USAGE OR COLLECTION. The ethical nature of an AI system depends on the ethical status of data and the way it is labelled for training and evaluation purposes. Are there any risks resulting from the use (from others) or collection (by you) of data and labels? Please check below all issues or concepts that you think apply to your research in this respect.*

The check boxes below all point at a category of issues that may apply to your work. Tick the boxes that may be relevant to your work and elaborate in the subsequent text field on the details.

Please elaborate; Explain the possible risks and issues and how you will mitigate these. Or, explain why you feel there are no risks or issues related to data and label usage and collection.

- ☐ We will assess demographic biases, errors, or limitations in the data or labels used to train the AI. If so, please provide details.
- ☐ We will consider how these limitations may restrict the usability or performance of this AI in certain settings (intended or unintended). If so, please provide details.
- ☐ We make use of data for our AI. Please discuss whether the data was licensed for AI development, or the data owners provided consent for this usage; and whether there are copyright issues precluding AI usage.
- ☐ We use a pre-trained AI and/or train or fine-tune an existing model. Please discuss the suitability and provenance of the data that underlies the existing AI components.
- ☐ Training labels will be produced by us or were previously acquired by other parties. Please discuss why you believe the labels are acquired responsibly and reflect on the labelling burden.
- ☐ We will publish (part of) the data and labels for use by others. Please discuss whether you explicitly include documentation of limitations and other possible issues of the data.

6.3. AI METHOD. The algorithms and models, as well as approaches to training, tuning, and testing that constitute an AI system, also have ethical relevance. Are there any risks resulting from these, be it in your own work or using other people's algorithms and approaches? Please check below all issues or concepts that you think apply to your research in this respect.*

The check boxes below all point at a category of issues that may apply to your work. Tick the boxes that may be relevant to your work and elaborate in the subsequent text field on the details.

Please elaborate; explain the possible risks and issues and how you will mitigate these. Or, explain why you feel there are no risks or issues related to the AI method.

- ☐ We use an existing AI, e.g. as part of a larger software system, or train a new AI. Please discuss whether the decisions of the AI may or may not be explainable in a technical sense.
- ☐ There is a significant environmental cost in one or more of the steps of the AI approach (e.g., in modelling, training, or tuning). Please discuss whether you have reflected on alternatives and on ways to minimize energy expenditure.
- ☐ We use techniques or elements in the AI that can introduce or increase the demographic biases in the AI, such as the choice of an objective function, model architecture, or pruning technique. Please discuss how you will mitigate this.
- ☐ We employ techniques that may suffer from memorization issues. Please explain: can the original training data be exposed by leveraging these memorization issues? Does that lead to potential issues of privacy or copyright?
- ☐ We make a new AI model public or available for use. If so, please discuss whether you assess and document systematically, e.g. in a model card, any biases, errors, or limitations that the AI has. Furthermore, discuss whether you attach an AI license to limit the use cases of the AI, and thus prevent misuse, and other ways in which you ensure that usage of your system aligns with the intentions for which you developed it.
- ☐ We use algorithms and (pre-trained) models from others. Please discuss to what extent you are aware of the above risks resulting from their work.

6.4. AI PUBLICATION AND/OR DEPLOYMENT. Ultimately, AI gets deployed in practice. Will you make a new AI model public or available for use? What is the context in which it is supposed to be deployed (by you or by others)? Are there any ethics issues arising from intended as well as unintended contexts of use, skills and attitudes of users? Please check below all issues or concepts that you think apply to your research in this respect.*

The check boxes below all point to a category of issues that may apply to your work. Tick the boxes that may be relevant to your work and elaborate in the subsequent text field on the details.

Please elaborate; explain the possible risks and issues and how you will mitigate these. Or, explain why you feel there are no risks or issues related to AI deployment.

- ☐ We know, or at least have some expectations, of which context or purpose the AI is supposed to be deployed in. Please discuss: (a) Does the deployment context fit with the original data collection, labels, and training approaches? And (b) Is the deployment aligned with the values of the stakeholders (in other words, is it an appropriate use in that context)?
- ☐ There is a significant environmental cost associated with deploying and querying the AI. Please discuss whether you have reflected on alternatives and on ways to minimize energy expenditure.
- ☐ The AI is, in principle, supposed to play a role in processes where decisions are made or actions are taken. Please discuss: (a) What is the risk that the AI might make the wrong/biased decisions or actions, and what can you do to minimise the bias or the impact thereof? (b) Is this deployment completely automated, or should it be with an expert in the loop? Is it clear to the users, who is accountable for decisions, even when made jointly by AI and humans? And (c) are users aware of the effects of the AI on their own decision-making?
- ☐ There is a need for users to understand the operation of the AI. Please discuss: (a) Will it be understandable to the users what are the decisions of the AI and on what grounds they were made, in this deployment, without help from the AI developer? (b) Are the users aware of any biases, errors, or limitations that the AI has (so they do not have unrealistic expectations?
- ☐ There are possible long-term and downstream effects of deploying the AI. Please discuss: (a) Are the users aware of their role in the AI development process (e.g., they produce new training data), and are there any risks of unfavourable feedback loops in this process (e.g., strengthening biases of users)? And (b) is there a need to monitor the effects of the AI deployment in the long term, e.g., to detect any newly introduced cognitive biases, and will you do it yourself or communicate this fact so others know they should do it?

6.5. RECURSIVE DOWNSTREAM EFFECTS FROM AI. Sometimes, data that is produced by an AI deployment, is made public on the Web or in other forms, such that it may again contribute to future training data. Is that the case, and if so, what are the potential risks, and are they justified? Are there any mitigations?*

- ○ No, this is not the case
- ○ Yes
  - 💬 Please elaborate; Explain the possible risks, whether they are justified and whether they can be mitigated.

6.6. (UN)INTENTIONAL HARM AND INTENTIONAL MISUSE: Are there any risks of harm following from the intended deployment of the AI, or risks of the AI being misused for harmful effects?*

💬 Intentional misuse may include (but is not limited to) harm from fake content; undesirable surveillance and violation of privacy; or AI-supported decision making that is imposed upon people against their will. Unintentional harm may follow from errors in the AI output (e.g., a pedestrian pushing a bicycle being misclassified as a cyclist; or a system mistakenly responding to erroneous emotion recognition). Intentional harm may follow from AI that did not make an error and was applied correctly to have a real, potentially harmful impact on people (e.g., people not getting invited for a job interview because the automatic application-analysing AI discarded their letter; algorithms in crime & law that inform police or judicial decisions; algorithm supported decisions in insurance or bank loans; health care decision support systems).

- ○ No
- ○ Yes
  - 💬 Please elaborate on these risks and how they will be mitigated

7. CYBERSECURITY

7.1. CYBERSECURITY: Will the research involve any internet scanning or other cybersecurity issues, such as the possible discovery of security vulnerabilities, experiments with malicious software (e.g., computer viruses), live internet measurements, or the discovery and investigation of illegal activities on the Internet?*

- ○ No
- ○ Yes

7.2. SECURITY WEAKNESSES: Could your research result in the identification of security weaknesses or vulnerabilities in existing systems?*

- ○ No
- ○ Yes

7.3. MALICIOUS SOFTWARE: Will your research involve experiments with malicious software (e.g., computer viruses) or real-world attacks (e.g., denial of service attacks)?*

- ○ No
- ○ Yes

7.4. INTERNET: Will your research involve interactions with external machines on the Internet?*

- ○ No, this will be an offline research
- ○ No, we will be doing passive measurements
- ○ Yes, we will be doing active measurements or interactions

7.5. ACCIDENTAL DISCOVERY: Might your research lead to the accidental discovery of illegal behavior or behavior that could pose a risk to others, either directly or indirectly, on the Internet?*

- ○ No
- ○ Yes

7.6. RISK FOR RESEARCHER OR OTHER STAKEHOLDERS: Might your research pose a risk of harm or retaliation to the researcher(s) or other stakeholders, such as owners of the machines involved in the research? This may be, for instance, by exposure to illegal or offensive behaviour or interactions with groups that may retaliate.*

- ○ No
- ○ Yes

7.7. DEALING WITH CYBERSECURITY-RELATED RISKS: Please explain concisely, and in relation to your answers above, how you will deal with the various potential issues raised in the previous questions of this section.*

Explain if applicable

- what measures you will take to disclose the security flaws, preventing harm on the users;
- what measures you will take to prevent the unauthorized disclosure, manipulation, or deletion of information and to prevent malfunctions in real systems;
- how you will minimise the impact on the accessed system(s);
- how you will deal with accidental discoveries;
- how you will minimise the risk of harm to the researcher(s), bystanders, or other stakeholders.

7.8. COORDINATED VULNERABILITY DISCLOSURE: Please explain whether and how you will follow the UT CVD policy.*

Link to the UT procedure for Coordinated Vulnerability Disclosure.

8. ANIMAL RESEARCH PARTICIPANTS

8.1. Does your research involve animal subjects, but is not considered an animal experiment under the Experiments on Animals Act?*

Under the Experiments on Animals Act, an animal procedure or experiment is defined as any use, invasive or non-invasive, of an animal for experimental or other scientific purposes, with a known or unknown outcome, or educational purposes, which may cause the animal a level of pain, suffering, distress or lasting harm equivalent to, or higher than, that caused by the introduction of a needle in accordance with good veterinary practice.

Research containing animal experiments need approval of the CCD (Centrale Commissie Dierproeven). For more information, please contact the IVD (Instantie voor dierenwelzijn) at the UT.

However, some research is carried out with animals but does not fall under the above - this question is aimed at such research.

- ○ Yes
- ○ No

8.2. Please give a description of your research including:

- **The number of animal subjects and in- and exclusion criteria**
- **The research procedure**
- **How you will account for the individual and social welfare of the animals involved**
- **If there is expertise within the research team on animal welfare or if outside experts are involved, and how that is organised***

8.3. If you have, you can upload any accompanying documentation (i.e., research protocol)

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9. UNINTENDED CONSEQUENCES, MISUSE, AND APPLICATION RISKS

9.1. UNINTENDED CONSEQUENCES: Is it reasonable to anticipate unintended negative consequences from the technology?*

e.g., harm from technology failing to operate properly; unintended side effects from using the technology; a system providing unwarranted advice.

- ○ No
- ○ Yes
  - Please elaborate and explain how you will prevent or mitigate undesirable consequences

9.2. MISUSE: Is it reasonable to anticipate that the research will provide knowledge, products, or technologies that could be intentionally used to threaten, or non-intentionally result in threats, to public health and safety, human wellbeing, democracy, crops and other plants, animals, the environment, or material infrastructure?*

More explanation in the FAQ.

- ○ No
- ○ Yes
  - Please elaborate and explain how you will prevent or mitigate undesirable consequences

9.3. INCLUSIVITY AND SOCIAL INJUSTICE: Is a disproportionally negative impact foreseeable on certain groups of users or non-users, for example, people of a certain age, gender, sexual orientation, social class, race, ethnicity, religion, political orientation, culture, or disability, creating or reinforcing social injustices?*

More explanation in the FAQ.

- ○ No
- ○ Yes
  - Please elaborate and explain what you will do to prevent or mitigate it

9.4. MILITARY APPLICATION: Does your research or prototype have military/police/defense applications, or is it carried out in an organizational context related to the military?*

Some research may furthermore fall under (inter)national regulations on knowledge safety and export control. For more information, see the website of the Knowledge Safety Team (KST). They also offer a self-assessment to check whether your research falls under the Knowledge Safety domain.

- ○ No
- ○ Yes
  - Please elaborate and explain whether this is a potential ethical issue; include implications regarding research funding that contributed to the research

10. OTHER ETHICAL ISSUES

10.1. BURDEN ON NON-PARTICIPANTS: Does the research impose an undue burden on stakeholders other than research subjects?*

Besides research subjects, other people may be involved in your work that experience an undue burden. E.g., bystanders, other people working in the same setting, third parties who are called upon to support your research activity, etcetera.

- ○ No
- ○ Yes
  - Please explain

10.2. CONFLICTS OF INTEREST: Do any of the parties involved in overseeing or carrying out the research have a potential conflict of interest?*

Conflicts of interests could include, e.g.:
o financial interests of participating researcher(s) or overseers that could affect or reasonably appear to affect the ethical conduct, review or oversight of the proposed research;
o non-financial interests of the participating researcher(s) that could cause conflicts of interest, including conflicts of commitment (situations in which persons have obligations to others that may interfere with the ethical conduct, review or oversight, such as contracts, research collaboration or supervision, including limitations to open sharing and publishing of research results), and
o conflicts of conscience (situations in which the personal beliefs of persons, such as religious, political or ideological beliefs, could interfere with the ethical conduct, review or oversight; or “tainted collaborations” when it is foreseeable that a collaborator does not commit to the same ethical standards).

- ○ No
- ○ Yes
  - Please elaborate and disclose any possible conflicts of interests; if relevant, include information about (co)funders and (co)sponsors.

10.3. RISKS TO THE RESEARCHER: Will the study expose the researcher to any significant risks?*

Some example risks are (see also the FAQ):

- collecting data in potentially dangerous environments or through dangerous activities
- dealing with sensitive, distressing, or controversial topics
- being at risk of retaliation for your research
- becoming exposed to media pressure or public controversy through your research
- when working in a setting that may pose other 'lone worker' risks.

- ○ No
- ○ Yes
  - Please explain the possible risks and how these will be mitigated

10.4. OTHER POTENTIAL ETHICAL ISSUES: Do you anticipate any other ethical issues in your research project that have not been previously noted in this application?*

This section invites you to consider whether your research might raise any other ethical conflicts/dilemmas, apart from what is covered in this checklist, for example due to new developments in research ethics in your field. Please feel free to share your considerations/hesitations with the committee. Doing so will not compromise your proposal, and it might actually help you to address such conflicts or dilemmas in the best way possible.

- ○ No
- ○ Yes
  - Please state any issues and explain how you propose to deal with them

10.5. Any other remarks or uploads

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11. CLOSURE

11.1. I have answered all questions truthful and complete*

- ☐ Yes

12. COMMENTS

13. CONCLUSION