Call for project proposals

Trustworthy AI

Trond Mohn Foundation's (TMS) vision is to make a substantial difference to the development of Norwegian research milieus aiming for the highest international level.

During the past decade, artificial intelligence (AI) has achieved remarkable technological breakthroughs, and it has become a natural part of how research, education, business, and governmental work is conducted. However, for AI to receive broad acceptance in society, trustworthiness of AI systems is a crucial condition.

Existing AI systems do not address important criteria that promote trustworthiness in a satisfactory fashion, nor do we have unified formal scientific definitions of human terms like fairness and ethical aspects. It is even not clear whether or to what extent different criteria can be met. There are also serious weaknesses in the legal frameworks in which AI systems operate. In order to meet this challenge and strengthen the high-quality AI research at the University of Bergen (UiB), the foundation and UiB together have developed plans for a research program in Trustworthy AI.

The University of Bergen has already established the platform UiB AI to coordinate, promote and make visible research, education and innovation initiatives in artificial intelligence at the university, and to facilitate collaboration and contact both between faculties of UiB and with partners and collaborators outside of UiB.

On this basis, the foundation has set aside a maximum of NOK 20 million that may be awarded to a research program in Trustworthy AI, and invite UiB to apply for TMS funding in two steps as follows:

> **Step 1**: Research projects: call for and select a limited number of research projects to be nominated to the TMS Trustworthy AI – call (maximum 18 MNOK)
>
> **Step 2**: Overarching coordination project: When the awarding projects has been decided by TMS, the UiB-AI steering group and the project PIs jointly, is invited to propose an overarching coordination project to facilitate common activities, common communication initiatives, and collaboration between the funded projects (maximum 2 MNOK)

Thematic scope

The TMS research program on Trustworthy AI will support ambitious research projects whose goal is to significantly increase the trustworthiness of AI systems. To address challenges related to the various properties defining trustworthiness, the projects must include expertise from multiple research groups and fields. For projects to be funded, it is not sufficient to focus on raising awareness

of the problems and challenges; projects must propose processes, methods, algorithms, and/or tools to contribute to the solutions of the challenges. Examples of research focus areas include but are not limited to:

- **Accuracy and robustness – technically sound and reliable AI systems.** How can the performance of an AI system deployed be evaluated with respect to accomplishing its design goals, while controlling for a nonnegative ethical "footprint" on the society?
- **Transparency and interpretability - explainable and provable methods and outcomes.** How can adequate transparency be accomplished where transparency is understood to be the extent to which the internal state and decision-making processes of an AI system can be made accessible to non-expert stakeholders. How can the information about the internal state and decision-making processes of an AI system be interpreted in a meaningful way for different type of stake holders?
- **Fairness, accountability, liability, and ethics**. Are like individuals served in a like manner by the same AI system (individual fairness)? Do system outcomes systematically differ between demographic groups (group fairness)? How fair is it to use particular information for developing an AI system (process fairness)? Does the development or deployment of an AI system erode the position in society or opportunities for some people? How should a balanced accountability relationship be established between the developers of an AI system and the stakeholders affected by its operation? How should responsibility and liability for the development, operation and impact of an AI system be assigned? How to ensure ethical development, deployment, and procurement of AI systems?

Within these topics, projects must indicate very clearly the main scientific field to which they will be contributing to.

Step 1: Nominate and prepare Project proposals

Nomination: UiB is invited to nominate a minimum of 5 and maximum of 8 project proposals. To ensure that TMS project funding will contribute towards the aims of the strategic initiative, the UiB AI steering group will coordinate the nomination process. Projects which meet the evaluation criteria will have to document high scientific quality. Priority will be given to proposals that clearly will contribute to the overall aims of UiB AI and the thematic areas outlined above.

The nomination process leading up to the submission of a limited number of proposals should focus on the scientific qualities of the project ideas with reference to this invitation and criteria and requirements as detailed in Appendixes A-C.

After submission, eligible proposals will be evaluated by an international expert panel appointed by the foundation in accordance with TMS selection procedures.

Requirements: In addition to the general criteria as laid out in Appendixes A to C, nominated proposals should meet the following requirements:

- The proposed research must be in line with the thematic scope of Trustworthy AI
- Proposals should be clearly cross-disciplinary / multi-disciplinary (at least two faculties involved)
- The main Principal investigator (PI) must hold a full-time professor or associate professor position at UiB.

Further information: Please consult Appendixes A to C

Appendix A – How to prepare the nominated project proposals to be submitted to TMS

In addition to meet the technical requirements outlined in this invitation, proposals must meet the following criteria:

1. Eligible applicant institution is UiB
2. Any TMS funding must be matched by resources at about the same level from the participating institution(s)

Applications must be written in English and contain the following:

- The research plan (template to be provided by TMS)
- The budget sheet (template to be provided by TMS)
- A letter from the UiB AI steering group confirming that the proposed research is in line with the aims and scientific scope of Trustworthy AI
- A commitment letter from the host institution describing the nature and level of its contribution to the project. The letter must be signed at the appropriate institutional level
- In cases where institutions other than the host institution are expected to contribute with resources to the project, a letter signed at the appropriate level of the contributing institution should be included. The letter should describe the nature of the resources to be committed and confirm institutional support of the proposal and its budget

How to submit project proposals:

One copy of each proposal and the required attachments, compiled in one (1) PDF file, should be submitted to *grants[at]mohnfoundation.no*

Receipt of submitted applications will be confirmed by email.

 Application deadline is 10.01.2023 at 12:00 (noon). Receipt of submitted applications will be confirmed by email.

Contact information:

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Appendix B – Evaluation criteria

TMS' scientific Advisory Committee will appoint a panel of internationally recognized experts to evaluate the proposals and make recommendations for funding to the foundation. In addition to the proposals, the expert panel will have access to this invitation text including the evaluation criteria as detailed in the below table.

Please note that only documents especially requested in this Invitation (see appendix A) will be made available to the expert panel.

The proposal will be assessed on its own merit. The participating research groups' academic competence, their complementary contributions to the collaboration plus an evaluation of the academic quality and feasibility will form the basis for the expert evaluation. The evaluation shall focus on scientific quality. In addition, priority will be given to proposals that clearly will contribute to the overall aims of UiB AI.

The basic reference for the evaluation is as follows:

ASSESSMENT CRITERIA	Description
SIGNIFICANCE	How may the proposed research activities contribute to realization of the describes goals and the subject area? Is there an identifiable potential to make a difference (impact on knowledge)?
FEASIBILITY	The extent to which the conceptual framework, design, methods and analyses are appropriate for the aims of the proposed research
ENVIRONMENT AND CONSORTIUM	The extent to which the available resources, the institutional commitments, and any other unique features, will contribute towards the success of the proposed research. The quality of the consortium as a whole (incl. complementarity / balance). Extent of uniqueness of national expertise at UiB in the proposal topic
INVESTIGATORS	The extent to which the Investigators' experience, track record, training, preliminary data/past progress will contribute towards the success of the project
SCIENTIFIC LEADERSHIP	The extent to which the need for strategic leadership is adequately addressed. Plans for recruitment of young research talents.
INNOVATION AND TRANSLATION:	The suitability of the described approach towards translation and innovation. Is there an identifiable potential to improve methods, the utilization of equipment/data and /or clinical practice?
INTERNATIONAL COOPERATION	The extent and quality of the international cooperation activities set out for the project. - International networks. - International mobility
NATIONAL COOPERATION	The extent to which the project will make use of national research expertise and help to promote national network building.
VALUE ADDED BY THE PROJECT	How the proposed project may contribute to: - Enhanced research competence and capability - Exploit the research opportunities provided by the existing research infrastructure - A long-term positive impact on the research milieus - Academic training
DISSEMINATION AND COMMUNICATION OF RESULTS	Plans for scholarly publication, dissemination and other communication activities. Plans for dissemination and communication activities vis-à-vis the public as well as end-users.

TMS's board of directors intend to make a decision based on the evaluation reports, during spring 2023.

Appendix C – Project funding and project grant agreements

Each project may be granted TMS funding for maximum 4 years. The maximum contribution from TMS is NOK 6 million per project (for projects lasting 4 years).

It is a prerequisite for funding that any TMS contribution is matched by resources from the participating institutions at about the same level. The overall budget of each project should allow for the establishment of a research team and for collaborative and/or cross- disciplinary research to take place.

Matching resources from the host institution may include salaries, consumables, equipment, overhead related to positions funded by TMS and "leiestedskostnader" (e.g. the use of labs / equipment).

Funding from the foundation may not be put towards overhead and/or other expenses not directly related to the project. For this call, TMS funding may normally not cover the salary of the project leader or "frikjøp" of UiB-employees.

In the event a grant application is successful, a project grant agreement will be entered into by TMS and the host institution, in which their respective responsibilities will be detailed in full.

In conjunction with the grant agreement, consortium agreements between the collaborating institutions/departments must be put in place as well as an agreement ensuring the project's affiliation to UiB AI and also access to the relevant research infrastructure.

Step 2: Overarching coordination project
This project will be established together with the awarding PIs and the UiB AI steering group.

Please note: The reply to this invitation involves the recording and processing of personal data (such as name, address and CV). Such data will be processed pursuant to Norwegian law. The questions and any personal data requested are required to evaluate the application in accordance with the specifications of the call for proposal and will be processed solely for that purpose by TMS. The review process requires that personal information given in the proposal must be made available to external reviewers. All such experts are required to sign and adhere to a declaration of confidentiality in this regard.