

Helmholtz AI Projects 2019 - Call

November 11, 2019

funded by the Initiative and Networking Fund

Background

HAICU, the Helmholtz AI Cooperation Unit¹, will permanently and strategically drive and coalesce the field of applied Artificial Intelligence within the Helmholtz Association. As an interdisciplinary platform, HAICU will compile, develop, foster, and promote Artificial Intelligence-based approaches for all Helmholtz Centers.

One essential component of HAICU is the funding of research projects that address the topics of applied Machine Learning and Artificial Intelligence. These annual calls are based on the general concept for HAICU and are in line with the future topics of the Initiative and Networking Fund (INF). These projects initiate cross-cutting research collaborations and identify innovative research topics in this area. In addition, they underpin the launch of the HAICU network.

Objective of funding

The objective of this first call for Helmholtz AI projects is to initiate and facilitate activities that address cross-center challenges and methods; it aims at several smaller collaborative projects with the potential to facilitate larger follow-up projects.

First impactful results are expected by mid-2021, i.e. one year after the funding starts. The results shall contribute to a vibrant network within the Helmholtz Association, fertilize cross-center collaborations and contribute to international visibility.

Goals

A Helmholtz AI project addresses two overarching goals:

1. exploit new Machine Learning and Artificial Intelligence strategies in the applicants' research field(s), and
2. foster interaction and method transfer between application and research fields (in and between Helmholtz Research Areas).

In order to allow for vigorous exploration of new approaches and to encourage disruptive ideas, Helmholtz AI projects explicitly call for 'high risk, high gain' project proposals that prize learning from (fast) failure over incremental success. Activities within projects should strongly impact research at participating Helmholtz Centers and should contribute to the overall development of the HAICU community.

¹ Concept for HAICU: www.helmholtz.de/fileadmin/user_upload/01_forschung/Helmholtz_Inkubator_HAICU.pdf

Criteria

Projects shall be aligned with the goals formulated in the HAICU concept (detailed in “1. Thematic Criteria” and “2. Further Criteria”). Applications that meet the following criteria will be evaluated based on the award criteria (see below in “Evaluation process, selection, and award criteria”).

1. Thematic Criteria

- a. Projects need to focus on data evaluation and method application (or similar activities).
- b. Projects with a substantial share of or focus on data collection, data preparation/cleaning or validation are not eligible for funding.

2. Further Criteria

- a. Helmholtz AI projects shall combine substantial and reasonably balanced contributions from scientists from at least two Helmholtz centers.
- b. External partner(s) with outstanding expertise or access to specific resources may be included in a consortium; funding will be provided for Helmholtz centers; in clearly documented cases, funding can also be provided for highly qualified university partners.
- c. The cooperation and management plan of the project should comprise effective communication, participation and decision-making mechanisms between the partners.
- d. Applications shall outline deliverables that can be achieved over the course of the funding period and demonstrate tangible outcomes. First deliverables need to be envisioned after 12 months upon the start of the project (non-limiting list: publication of a software or generated reference data set, policy/white paper, educational material, communication material, poster). Applicants shall describe the expected results and impact of the project for the participating centers, the Helmholtz Association and the research field.
- e. The application shall describe how a swift start of the project is ensured upon the funding decision (e.g. hiring, data provision). The project must start 3 months after the funding decision at the latest.
- f. Helmholtz AI projects can apply for a total volume of up to € 400k in total for a running time of 2-3 years. Half of the project volume (i.e. max. € 200k) will be funded by the INF and the other half will be contributed by the centers. The latter has to be confirmed by a signed letter from the board of directors when submitting the application.
- g. Staff, travel expenses and cost for consumables are eligible for funding; investments are excluded.
- h. A list of independent experts as potential reviewers can be provided. The proposed experts need to be unbiased.
- i. Applications submitted for Helmholtz AI projects must not have been submitted to another funding line of the Helmholtz Association.

Rights and Obligations

1. During the funding period, projects commit to actively participate in HAICU's cross-field activities, such as progress workshops, method exchange workshops or hackathons, and to present their results.
2. Funded projects commit to share short updates about ongoing projects (e.g. on the HAICU website) regularly.
3. Annually and at the end of their respective funding period, all Helmholtz AI projects will submit a short written (final) report demonstrating progress and results (referencing deliverables) to HAICU Central and the HAICU Scientific Advisory Committee. These reports form part of the general reporting of the HAICU platform.

Applications

1. The application consists of:
 - a. Cover page (max. 1 page)
 - b. English and German abstracts (max. 1 page)
 - c. Main body (max. 5 pages)
 - d. Appendix (work packages, deliverables, budget, confirmation letters and CVs)
2. The application shall be written in English, with the exception of the German abstract, and formatted in DIN A4, Arial, 11pt, 1" margin and single line spacing. A full template specifying the structure and formatting is provided.
3. The main body's structure is:
 - a. Scientific case
 - b. Unique and ambitious approach
 - c. AI/ML methods and/or data sets
 - d. Long-term impact
 - e. Implementation and management
4. Important elements on the cover page include:
 - a. title and acronym
 - b. up to 10 keywords
 - c. names and contact information of coordinator(s) and Principal Investigator(s)
 - d. names of participating centers and external partners
 - e. budget
5. CVs of the principal investigators and, if available, CVs of prospective candidates for a specific position should be submitted in the appendix. Please note that your CV should also contain references to relevant accomplishments beyond scientific papers and citation metrics; such accomplishments may for instance be software packages, policy papers, standards, datasets, patent filings, entrepreneurship and industry collaborations.
6. A budget plan and a declaration by the boards of the participating centers regarding the matching of the funds have to be included.
7. The application can include a list of six unbiased independent experts with relevant expertise in the methodological aspects of the application, at least three of which should be female (experts could be invited to participate in the panel meeting).
8. An incomplete application may lead to the exclusion of the application from the selection procedure.

Evaluation process, selection, and award criteria

Proposals are subject to the following evaluation procedure. Proposals are checked with regard to formal requirements. Proposals are evaluated by a panel of independent experts (no presentation). The panel performs a pre-assessment of all applications (all applications subject to the pre-assessment will also be assessed in the panel meeting). Based on this evaluation, the panel will recommend a list of projects for funding. The Steering Board is notified and forwards the list to the President. The President will review the list of ranked proposals and decide which projects shall be funded.

Proposals will be evaluated by a panel of experts, on the basis of the award criteria 'ambition', 'research impact', 'methodology impact' and 'quality and efficiency of the implementation'. The criterion 'ambition' is weighted with 1.5.

Award criteria	Aspects
Ambition	<ul style="list-style-type: none"> Extent to which the proposed project is beyond the state of the art, demonstrates unique innovation potential (e.g. ground-breaking objectives, novel concepts and approaches) and takes on risk Clarity of the objective(s) Soundness of concept and credibility of proposed methodology
Research impact	<ul style="list-style-type: none"> The extent to which the output(s) of the project would contribute to advance the specified research field(s) The potential to contribute to establishing and strengthening a long-term cooperation between the partners.
Methodology impact	<ul style="list-style-type: none"> The extent to which the output(s) of the project would contribute to advance the development/implementation/use of the specified method The potential to exploit and disseminate the project results
Quality and efficiency of the implementation	<ul style="list-style-type: none"> Quality and effectiveness of the work plan, including the extent to which the resources assigned to work packages are in line with their objectives and deliverables Appropriateness of the allocation of tasks, ensuring that all participants have a valid role and adequate resources in the project to fulfil that role Complementarity of the partners and balance of expertise Readiness of applicants to commence the project within the timeline indicated in the call

The evaluation procedure and the handling of proposals will be jointly managed by staff at the Helmholtz Association Head Office and Helmholtz AI Cooperation Unit Central (at the Helmholtz Zentrum München). The evaluation meeting will be managed by the Head Office. The scientific leadership of HAICU (i.e. the scientific directors and steering board members) will have no access to submitted proposals or assessments at any stage during and after the evaluation procedure. They will not contact the panel of experts.

Schedule

Date	Event or action
November 2019	Announcement of call for Helmholtz AI projects
Starting November 2019	Submissions accepted for Helmholtz AI projects; applications are submitted via HAICU Central Website (backup is contact@haicu.de) by the coordinating center in electronic form (max. 10MB) as a single PDF file.
17 January 2020	Application deadline
January-February 2020	Proposals meeting the formal selection criteria are reviewed and scored by panel members according to award criteria
March-April 2020	Panel members meet to decide which projects to recommend
March-April 2020	The Steering Board is notified and forwards the list of ranked proposals recommended for funding to the President of the Helmholtz Association. The President decides which projects to fund.
April 2020	Funding contracts between Helmholtz Association and submitting centers are being drawn up
April-June 2020	Start of Helmholtz AI projects

For further inquiries, please contact via email:

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- Helmholtz Head Office: Lars Mehwald, inkubator@helmholtz.de

Appendix

1. Application template
2. Criteria for bias/ conflict-of-interest
3. Information about the processing of personal data