

Ministry of Culture and Science of the German State of North Rhine-Westphalia

Funding line: Artificial Intelligence / Machine Learning

**Call for project funding applications
for junior researchers in the field of fundamental research**

**- Funding program for initial AI research projects – KI-Starter –
5th and 6th round**

1. Preliminary remarks

Thanks to their ability to automatically generate knowledge from digital data, artificial intelligence and machine learning are revolutionizing almost all fields of science and society. Applications range from intelligent maintenance of industrial plants to individualized assistance systems in the area of home automation and new mobility concepts. Here, the reliability of AI systems is a fundamental prerequisite for ensuring that such AI components make a long-term contribution to value creation and assist humans as competent partners in finding solutions to real problems; rather than disenfranchising people and taking away their responsibilities, AI systems need to support people and complement them so that processes can be designed better, more safely and more efficiently. Necessary requirements for this are technologies that integrate seamlessly in existing systems and solutions to problems, offer intrinsic compatibility with human expectations and human behavior, present and integrate knowledge in a comprehensible form, in the process meeting the requirements for safety, reliability and robustness, protection of the privacy of individuals, and data sovereignty.

The federal state government of North Rhine-Westphalia has set itself the goal of establishing itself as one of the leading hubs for artificial intelligence in Europe. Under the umbrella of the digital strategy, “AI made in NRW” will be shaped here by the three guiding concepts “Excellence in research and education”, “Economic success”, and “Ethical implementation”. The Artificial Intelligence competence platform set up at federal state level (KI.NRW) supports the expansion of AI competences and AI applications. KI.NRW is also pushing technology transfer and its network structures in a European and international context.

In view of the increasing demand for well-trained and well-educated AI specialists, the Ministry of Culture and Science of North Rhine-Westphalia (MCW) intends to push ahead with the training and education of human resources. In particular, there will be a drive to attract young researchers into an academic career immediately after their graduation with a PhD in the field of artificial intelligence / machine learning (AI/ML).

Junior researchers will be given the opportunity to carry out independent research projects autonomously and under their own responsibility. This support will provide a valuable contribution to their further academic path.

To date, ten candidates achieved funding in four rounds. The successful program now is continued.

The MCW will be supported in this undertaking by the lead partner Projektträger Jülich of the research center Forschungszentrum Jülich GmbH.

2. Funding purpose and object of the funding, prerequisites for funding

The "Initial AI research projects" program outlined here is pitched at supporting young academics immediately after they graduate with a PhD and will support talented young people at the start of their academic career. At the same time, this will also help promote a long-term bond between the next generation of AI researchers and the region of North Rhine-Westphalia (NRW).

In the 5th and 6th round, funding will be provided for up to 6 candidates in all to enable them to carry out their own research project in the field of AI / ML at a university in NRW after they have completed their PhD. Applications shall be submitted by the university at which the project will be carried out.

It is a prerequisite for funding that the PhD must be completed at the latest when the funding starts; in addition, the PhD must not have been awarded more than three years prior to the start of funding.

The funding is designed for young researchers to:

- provide them with support at the start of their academic career,
- prepare them to take on further third party-funded projects, in particular to apply for and set up their own research group, and
- enable international visibility and long-term networking particularly in the AI research landscape in NRW.

The research projects should contribute to fundamental research in the field of machine learning, deep learning and other relevant AI methods. Here, research projects will be particularly welcomed that contribute to making the integration of such methods in existing systems and problem solutions simpler and more robust, or research projects that address explainability and transparency, or data security and data protection, in the sense of *trustworthy AI*. Issues that are considered could be taken, for example, from one of the following fields:

- Interactive and human-centered AI
- AI methods under limited resources
- AI-assisted modeling and simulation
- AI in unsafe and changing environments
- Modularization, automation and transfer of AI functions
- Data security and data economy in ML methods
- Robust AI models and ensuring that guarantees are met
- Integration of knowledge and data-centered models
- AI innovations for unstructured data and distributed environments
- New AI methods for central application fields such as logistics, process

automation, robotics and speech processing

- Cognitive robotics
- Computer vision

Areas of competence in which the university submitting the application has already worked should preferably be incorporated and expanded upon in the project.

In order to advance international research experience, a cooperation with an international research partner is expressly desirable. A corresponding stay abroad of up to six months is eligible for funding.

It is expected that the junior researchers who are in receipt of this funding should actively participate with their field of research in the AI strategy at federal state level and, in particular, that they should take part in the training of graduates in the state of NRW, for example through tutorials.

3. Scope, type and amount of the financial contribution

The project funding is set up for a period of 2 years. The maximum grant amount is € 175,000. The university submitting the application is expected to carry its own share of the costs of at least 10% of the expenditure that is eligible for funding.

The following types of expenditure are eligible for funding: personnel expenses and material expenses, as well as travel costs.

- Personnel costs for your own post in accordance with the German TV-L salary scale
- Where appropriate: necessary assistants
- Necessary travel expenditure in accordance with the travel cost laws of the state of North Rhine-Westphalia (NRW)
 - For conference attendance, studies, exchanges
 - To international cooperation partners; max. duration 6 months
- Necessary material resources (e.g. OpenAccess)
- Required equipment that exceeds the scope of the basic equipment

Basic equipment is not eligible for funding.

4. Recipient of the funding, legal basis

All universities that are under the responsibility of the federal state of North Rhine-Westphalia are eligible to apply for this funding. A maximum of two applications per round of calls may be submitted per university.

The grant will be issued as project funding in the form of shared financing on the basis of §§ 23 and 44 of the budgetary regulations of the state (*Landeshaushaltsordnung*, LHO) and the administrative provisions enacted in this regard as a non-repayable grant. The general ancillary provisions for grants to support projects (*Allgemeine Nebenbestimmungen für Zuwendungen zur Projektförderung*, ANBest-P) will become part of the grant decision.

5. Application documents, application deadlines and start of funding

The tender text and the general conditions are available for download in German and English on the website of Projektträger Jülich. The application form and the template for the “Work, Time and Expenditure Plan (AZA)” are also available here: <https://www.ptj.de/ki-starter>

Applications can be submitted by the following two cut-off dates:

5 th selection round:	14-Oct-2022
6 th selection round:	31-Mar-2023

Assessments will be carried out subsequently (see point 6.):

The applications together with all attachments stated in the application form must be sent by the stated deadline (postmark) in triplicate on paper (one original and 2 copies of the original, not bound) as well as a single copy in electronic form (as a single PDF document, the AZA additionally as an Excel file) on CD-ROM / DVD (no USB stick!) to the company handling the application and award process, Projektträger Jülich.

Further information and remarks are explained in the *Application Details* and can be requested from the lead partner of the project, Projektträger Jülich.

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6. Selection procedure

The selection procedure will take place in two stages. The assessment will only be carried out if all required application documents have been submitted in full. The best-suited candidates after the written assessment will be invited to a selection symposium. The selection symposium is expected to take place in February 2023 in Düsseldorf. Date concerning the sixth selection round will be announced as soon as possible.

The innovativeness and excellence of the submitted research applications are key selection criteria. Furthermore, the contribution made by the concept in terms of positioning the applying university in the AI research landscape will also be considered.

7. Start of funding

Subject to a positive assessment and approval, the start of funding will be different depending on the selection round:

5 th selection round:	01-Jun-2023
6 th selection round:	01-Oct-2023

The funding period is limited to 2 years.