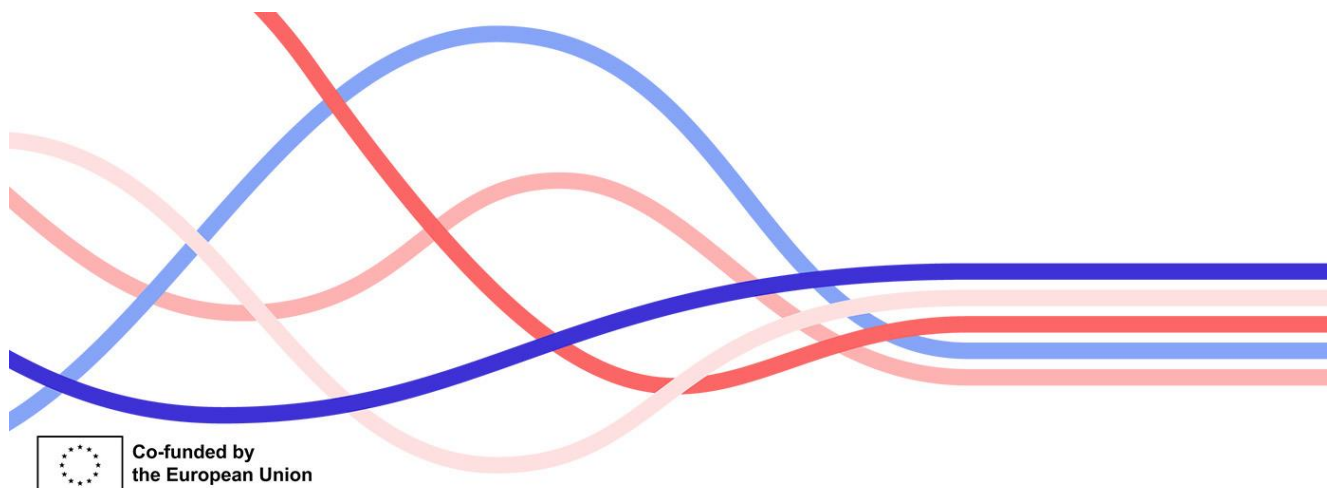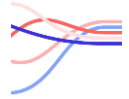# DSTrain – Guide for Applicants

Call 1 – Deadline 14th April 2024

Version 1.0

12 January 2024

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DSTrain Postdoctoral programme

Interaction between data science, computational science, natural sciences, and technology

DSTrain is a 5-year postdoctoral programme launched and managed by dScience, the Centre for Computational and Data Sciences at the Faculty of Mathematics and Natural Sciences, University of Oslo (UiO). The programme is partly funded by the EU Horizon Europe under the Marie Skłodowska-Curie Action (MSCA) - Co-funding of Regional, National and International Programmes (COFUND).

DSTrain will award 36 postdoctoral fellowship positions within the overarching field of data science, with a focus on the interaction between data science, computational science, natural sciences, and technology. Each fellowship will last for 36 months and will be announced in two calls during the programme period. The first call will open in January 2024 and will include 18 positions. The selected applicants will start their postdoctoral projects no later than October 1, 2024. The second call will be announced in January 2025, with project starts in autumn 2025.

The Postdoctoral Research Fellows will be employed at the Faculty of Mathematics and Natural Sciences and will be hosted by the relevant department and research group. The appointments will be full-time positions lasting for three years, with 10% of the time dedicated to mandatory duties, typically teaching. It is not possible to be appointed for more than one Postdoctoral Research Fellowship at the University of Oslo.

The DSTrain programme will facilitate ground-breaking research by emphasizing interaction between data science, computational science, natural sciences, and technology. The postdoctoral fellows will be integrated into research groups in scientific disciplines that urgently require researchers with computational skills. These research groups provide excellent environments for research, offering supervision and resources for world-class research, innovation, and digital infrastructure. The DSTrain programme encourage cross-disciplinary collaboration and provide training in computational and transferable skills, including a range of cross-sectorial secondments opportunities.

Target group of the programme

The main purpose of a postdoctoral fellowship is to provide the fellows with enhanced skills to pursue a leading scientific position within or beyond academia. The programme is designed for highly talented and ambitious researchers with backgrounds in Astrophysics, Biosciences, Chemistry, Geosciences, Informatics, Mathematics, Pharmacy, Physics, and Technology Systems, who through the development of their individual-driven research projects will combine disciplinary expertise with interdisciplinary elements and integrate the use of computational methods.

More details are available at the [DSTrain website](#), where you can also find further information about the application process and all available research themes offered through DSTrain.

Scientific focus

The efforts in DSTrain are aligned with the primary goal of the European Green Deal stating that Europe shall be the first climate-neutral continent by 2050. Through the multitude of innovative ongoing research activities at the MN Faculty and our associated partners, the DSTrain programme offers a unique opportunity to support projects with a strong focus on sustainability and the green transition.

Data science and computing play an important role in the implementation of the green transition of society. Research related to sustainability is a prioritised area at the MN Faculty, and many of our researchers are involved in projects motivated by this. Examples include physicists working with sustainable solar cell technology, researchers at the Technology Systems department developing sustainable batteries, and mathematicians, statisticians and computer scientists researching the production and distribution of renewable energy.

Our understanding of climate changes is based on huge computational models capturing numerous physical phenomena on how the Earth´s atmosphere behaves and develops based on natural and human-made impact. The
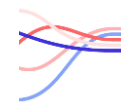
Intergovernmental Panel on Climate Change (IPCC) derives crucial findings and recommendations through thorough data analysis and high-performance computing. In the pursuit of a sustainable future, machine learning, artificial intelligence, and edge computing are becoming increasingly prevalent. These technologies contribute to the interpretation of environmental data, enhance the efficiency of weather-dependent energy generation, and improve the accuracy of climate predictions.

In addition to machine learning algorithms, artificial intelligence and edge computing are equally crucial in addressing fundamental aspects related to the efficient and accurate representation of knowledge. Furthermore, data management, including efficient data sharing, data curation, and structuring large datasets, is essential. Advances in digital twin technologies, robotics, and quantum computing will also contribute to shaping the green transition. As the utilization of machine learning algorithms and artificial intelligence systems becomes more prevalent, it is crucial to consider questions regarding uncertainty, explainability, and ethical implications.

Research themes

All DSTrain research projects will be focused on interdisciplinary themes and the integration of computational methods will be essential. A fundamental principle of the DSTrain programme is that ground-breaking and innovative results are achieved through the collaboration of data science and natural sciences. It is crucial that this principle is clearly reflected in the project description. The postdoctoral fellows will be encouraged to develop their individual-driven research projects, ensuring academic freedom and scientific independence.

Detailed descriptions of the available research themes, as well as contact information for each, can be found on the DSTrain website under Research Areas, sorted by the following categories: Astrophysics, Biosciences, Chemistry, Geosciences, Informatics, Mathematics, Pharmacy, Physics, and Technology Systems.

Applicants are required to formulate their own research projects within these themes and must specify the theme to which their project belongs.

Postdoctoral training

The DSTrain training programme aims to provide a comprehensive set of research, scientific, and transferable skills. Postdoctoral fellows will be introduced to the available training options at the beginning of their fellowships and will be encouraged to participate by the Project Management Office (PMO). The primary objective of the training is to contribute to the professional development of the researchers by enhancing both research and non-technical competencies, promoting interdisciplinary and intersectoral knowledge transfer, and facilitating networking. The training will establish a multidisciplinary network of researchers, strengthened by individual and collective connections with actors from the private and public sectors outside academia.

The programme is designed to offer highly desirable skills for researchers seeking international career opportunities, both within academia and in non-academic sectors. The training programme consists mainly of network-wide training events specifically organised for the DSTrain programme, day-to-day research activities, and scientific, interdisciplinary, and transferable skills training offered at UiO, which can complement the training provided during network-wide events.

Postdoctoral fellows will be encouraged to participate in relevant international conferences, summer schools, seminars, and workshops to present and disseminate their results through poster or oral presentations. They will also have access to a wide range of soft skills training opportunities to strengthen their profiles, regardless of their career paths (academic, private sector, or public sector). These opportunities may include training on CV-building, leadership, supervision, proposal writing, impact analysis, communication, open science, responsible research and innovation, commercialization, entrepreneurship, and management.

To support strategic career development, all postdoctoral research fellows are required to submit a professional development plan no later than one month after the start of their postdoctoral period.
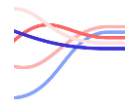
Application and evaluation

DSTrain will have two calls for applications. Each call is open for three months. Call 1 opens 12th January 2024, and with an **application deadline 14th April 2024, at 23:59, Central European Time.**

Eligibility

To be eligible, an applicant may be of any age and nationality and comply with the following criteria:

Qualification requirements:

The Faculty of Mathematics and Natural Sciences has a strategic ambition to be among Europe's leading communities for research, education, and innovation. Candidates for these fellowships will be selected in accordance with this and expected to be in the upper segment of their class with respect to academic credentials.

- Applicants must hold a degree equivalent to a Norwegian doctoral degree relevant to the work described in their research project within Astrophysics, Biosciences, Chemistry, Geosciences, Informatics, Mathematics, Pharmacy, Physics, or Technology Systems.
- The applicant's Doctoral dissertation must be submitted and successfully defended by the application deadline. Only applicants with an approved doctoral thesis and public defence are eligible for appointment.
- Fluent oral and written communication skills in English are required.

Marie Skłodowska-Curie requirements:

Applicants must also fulfil the following MSCA eligibility criteria:

(1) The applicants must fulfil the transnational MSCA mobility rules of COFUND, MSCA: not have resided or carried out their main activity in Norway for more than 12 months in the 3 years immediately prior to the application deadline. Compulsory national service, short stays such as holidays and time spent as part of a procedure for obtaining refugee status under the Geneva Convention are not considered.

(2) The applicants must be able to carry out fulltime research during the fellowship period; part-time work due to professional, family, or other reasons may be requested and agreed by the supervisor, beneficiary (UiO) and granting authority upon prior approval.

(3) The applicants must be in possession of a doctoral degree at the deadline of the co-funded programme's call, i.e., they have successfully defended their thesis. Researchers who have successfully defended their doctoral thesis but who have not yet formally been awarded the doctoral degree will also be considered as postdoctoral researchers and are eligible to apply.

Desired qualifications:

- Experience with interdisciplinary research projects.
- Experience with computational/statistical methods.

Personal skills:

- Strong quantitative and analytical skills.
- Independent thinking, creativity, leadership, and mentoring abilities.
- Good communication and interpersonal skills.

How to apply

The application must be submitted through the JobbNorge application portal. For an application to be valid, the candidate must submit a complete set of documents via the portal. Templates can be downloaded from the DSTrain website.

A complete application consists of the following documents:
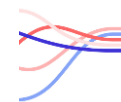
1. Cover letter: A statement of motivation summarizing the candidate's scientific work and research interests (maximum 1 page).

2. Project description: A description of the excellence, impact, and implementation of the applicant's project (maximum 8 pages excluding the abstract), using the DSTrain template. The project description must indicate the research theme under which the project falls, according to the list available on the DSTrain website.

3. CV: A summary of the candidate's education, positions, pedagogical experience, administrative experience, other qualifying activities, and career breaks if applicable (maximum 3 pages).

4. A list of publications and up to 5 academic works that the applicant wishes to be considered by the evaluation committee (maximum 2 pages).

5. Completed DSTrain form describing Place of activity and residence for the previous 3 years.

6. Completed and signed DSTrain ethical issues form.

7. Copies of educational certificates/academic transcript of records. Include a copy of the PhD diploma or an official statement on the certified date of the successful defence (not award) of the PhD.

8. Names and contact details of 2-3 references, including their name, relation to the candidate, email address, and telephone number.

Please ensure that all attachments are saved and uploaded with the following file name structure, replacing "Surname" with your last name:

1_Surname_Cover letter
2_Surname_Project description
3_Surname_CV
4_Surname_Publications
5_Surname_Place of activity
6_Surname_Ethical issues form
7_Surname_PhD certificate, etc.
8_Surname_References
(Surname = Last name = family name)

Please note that *only* documents submitted through the portal will be considered.

The application portal "JobbNorge" has a field for "application text" and a standard "CV". We ask you to *not* enter the application text in the portal (you may type your chosen thematic area to get to the next step), and to enter *only your personal details* at the CV stage in the portal. Your attached CV and other documents listed above will form the basis for the evaluation process.

Applicants can submit their application several times; new submissions will overwrite any older versions. It is also possible to save your application and return to JobbNorge later to finish and submit. You can submit the application at any date until the Call closes at 23:59, Central European Time, on the deadline date. Late or incomplete applications will not be accepted.

The project description

DSTrain research projects are designed and proposed by the applicants, with a focus on the interaction between data science, computational science, natural sciences, and technology. The proposed projects should align with the interests and capabilities of the applicant as well as the participating research groups at UiO, enhancing the research capabilities of both. It is expected that the appointed fellows will be able to complete their projects during the three-year employment period.

The participating research groups at UiO are divided into the following areas: Astrophysics, Biosciences, Chemistry, Geosciences, Informatics, Mathematics, Pharmacy, Physics, and Technology Systems. Each area has

defined a set of research themes (available on the project website), and the project description must correspond to one of these themes and specify which one. Please note that each applicant can only submit one research project in the same call, meaning that an applicant cannot apply to multiple themes. Applicants are encouraged to discuss their application with the contact person(s) for the relevant research theme to explore scientific focus and cooperation possibilities.

Applicants must use the DSTrain Project Description Template and submit the proposal in JobbNorge alongside the other required documents. Maximum length for the project description is 8 pages.

Ethics

DSTrain places a strong emphasis on maintaining high ethical standards. All research projects within the program must comply with EU and national/local ethics regulations.

Every application must include a completed DSTrain Ethics Form, which identifies and evaluates potential research ethical issues. The Project Description, as outlined in the proposal template, should also include a brief description and summary of ethical considerations, where relevant.

Evaluation and selection process

During the assessment of applications, special emphasis will be placed on the following criteria: i) documented academic qualifications, ii) project description, iii) quality of the project, and iv) the candidate's motivation and personal suitability. Interviews will be conducted with the most qualified candidates.

After the deadline of the call, evaluation and selection of candidates follow these steps:

1. Acknowledgement of receipt: After submitting their application, applicants will receive an email confirming receipt of the application and an outline of the next step and timeline of the selection process.
2. Eligibility check: The DSTrain Programme Management Office (PMO) will perform the admissibility and eligibility check for all submitted applications. All eligible and non-eligible candidates will be notified of their status.
3. Evaluation of research proposals: The PMO will assign at least three external independent expert reviewers to each eligible application. The evaluation will be based on the main criteria Excellence, Impact, Implementation, and Applicant qualifications. After the independent expert evaluation, each evaluation panel will convene, discuss the applications and determine the scores for each candidate. An Evaluation Summary Report (ESR) consisting of a short, written statement and the consensus score will thereafter be made. The selected and non-selected candidates will be notified of their status.
4. Interview: The top ranked candidates will be invited for an interview. The interviews will follow the structure and scoring described in "Selection criteria – Interview".
5. Final ranking and selection of successful candidates: The candidates' scores from the written (60% weight) and oral (40% weight) evaluations will form the basis for the final ranking. The final ranking will be made by the Selection Committee.
6. Information/offers to candidates: The PMO will inform all candidates of the outcome of the selection process via email, which may include placement on a ranked shortlist, placement on a waiting list, or rejection. Successful candidates will be offered a fellowship, and a formal offer will be sent confirming the granting of the fellowship. If a candidate declines or fails to respond to the offer, the position will be offered to the next qualified candidate on the ranked list. Successful candidates must begin their positions no later than October 1st, 2024.

Selection criteria, scoring and interviews

Submitted applications will be evaluated for excellence, impact, implementation, and application qualifications as listed in Table 1.1:

Table 1.1: Evaluation criteria and weighting for peer review.

Criterion (weighing)	Priority in *ex aequo* cases
Excellence (weight: 0.35)	**1**
- Quality and credibility of proposed research plan - Originality/Innovative nature of the project (in relation to relevant state-of-the art) - Soundness of the proposed methodology - Consideration of interdisciplinary, multidisciplinary and intersectorial aspects - Consideration of the gender dimension and other diversity aspects, if relevant to the research project - Quality and appropriateness of open science practices	
Impact (weight: 0.25)	**2**
- Potential impact on the career development of the researcher - Magnitude and importance of the project's contribution to the expected scientific, economic, and societal impacts - Quality of the proposed measures to exploit and disseminate research results, and to communicate research activities to different target audiences	
Implementation (weight: 0.2)	**3**
- Overall coherence, effectiveness and appropriateness of the work plan (including milestones and expected results) and assessment of risks - Quality and match of proposed project and research group facilities/infrastructure and staff hosting the researcher	
Applicant qualifications (weight: 0.2)	**4**
- Clear and credible motivation of the researcher for joining the programme and the research group(s) - Qualification and background of applicant (incl. non-academic work and career breaks) - Research experience and results (patents, publications, teaching and other results) - Independent thinking, creativity, leadership and mentoring abilities - Match between track record and proposed research of the researcher	

Scoring will follow standard MSCA scoring with 0-5 points being awarded for each sub-criterion as listed in Table 1.2:

Table 1.2: Standard MSCA scoring system:

| Scoring chart		
5	Excellent	Successfully addresses all relevant aspects of the criterion. Any shortcomings are minor
4	Very good	Addresses the criterion very well, but a small number of shortcomings are present.
3	Good	Addresses the criterion well, but a number of shortcomings are present.
2	Fair	Broadly addresses the criterion, but there are significant weaknesses.
1	Poor	The criterion is inadequately addressed, or there are serious inherent weaknesses.
0	Fail	Fails to address the criterion or cannot be assessed due to missing or incomplete information.

The applicant interviews will involve of a set of questions concerning the application in relation to the criteria listed in Table 1.3. These interviews will be conducted digitally and will last approximately 45 minutes. For each criterion, a score ranging from 1 to 5 (with 5 being the highest) will be assigned based on the scoring chart mentioned earlier (1.2). The final interview score will be the average of these three scores. All candidates will have the opportunity to ask questions during the interview.

Table 1.3. Evaluation criteria for interview phase:

Content	Evaluation criteria	Scores
Scientific presentation of previous research (e.g., PhD), or relevant work experience.	Clarity and consistency of presentation, ability to take part in a scientific discussion, oral English skills.	1-5
CV presentation and match between track record and proposed research project of the applicant.	Ability to answer CV related questions, match of CV to proposed research	1-5
Teamwork experience and interdisciplinary motivation.	Ability to take initiative and contribute to a team, display of motivation for interdisciplinary research.	1-5

To progress to the next stage, a minimum score of 3 for each criterion is required. In the event of a tie, the
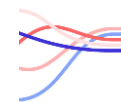
following priorities will be applied: i) Scientific presentation, ii) CV presentation, and iii) Teamwork. In case of a tie between candidates with the same scores, female applicants will be given priority.

Rebuttal procedure

Candidates have the opportunity to rebut the eligibility check, evaluation, and final ranking of proposals if they suspect procedural shortcomings. Requests for rebuttal can be made at three different points during the evaluation process: i) After the eligibility check, ii) After the evaluation of their proposals, and iii) After the final ranking. Within seven days of the information provided to candidates, a rebuttal can be made by completing the provided form on the DSTrain website and sending it to the Project Management Office (PMO). In case of a justified rebuttal, the application will be re-evaluated, or the interview will be redone. Rebuttal decisions are final.

Working at the University of Oslo

Employment

The successful applicants will be employed by the University of Oslo on fixed-term contracts as Postdoctoral Research Fellows. 10% of their working hours will be dedicated to required duties, which typically includes teaching responsibilities that contribute to the development of transferable skills. These duties will be outlined in an individual agreement between the Fellow and the department and specified in the Fellow's employment contract.

The salary for each postdoctoral fellow will be determined based on the Norwegian Central Collective Agreement. The net salary will be paid after tax deductions, as applicable. Read more about the Norwegian tax system.

If secondments are planned within the research project, fellows will remain employed by the University of Oslo during these periods. They will continue to enjoy all the benefits and rights accorded to them as employees, including during the secondment(s).

Open Access

DSTrain adheres to EU regulations for open access publishing and strives to ensure that research is widely accessible to the public. The University of Oslo has implemented a comprehensive Open Access policy , which aims to make research findings openly available to individuals, the public sector, businesses, and the global research community.

Intellectual Property Rights

All Postdoctoral fellows are employed by the University of Oslo. Research results with a commercial potential will be governed by the general IPR policy adopted by UiO.

Moving to Oslo

For individuals relocating to Oslo, the University of Oslo's International staff mobility office (ISMO) provides support. ISMO assists incoming international staff, including postdoctoral fellows, PhD candidates, guest researchers, and their families with the process of relocating to UiO. They can provide guidance on various aspects such as obtaining residence permits, finding housing, addressing tax-related matters, and locating childcare services. Additionally, ISMO offers assistance with various practical challenges associated with moving to a new country.

Ice skating at the Christmas marked in Oslo
Photo: VisitOslo/Didrick Stenersen

The promenade at Aker brygge in Oslo
Photo: VisitOslo/Didrick Stenersen

Contact

For further information please contact the DSTrain Project Management Office per e-mail: contact-dstrain@mn.uio.no.

For questions regarding the JobbNorge application portal, please contact HR Adviser Torunn Standal Guttormsen, e-mail: t.s.guttormsen@mn.uio.no.