

Data Science Impulse 2022-23

General presentation

Created to promote interdisciplinary exchanges and collaboration around data management and processing, the Data Science Competence Center (CCSD) at the University of Geneva intends to lead, each year, a collective reflection on a particular theme. In this perspective, the Scientific Computing Support (SciCoS) has joined the Data Science Impulse initiative to offer its expertise in scientific computing, to support researchers in the development of innovative methods.

For 2022-2023, the theme chosen by the Center is “Promises of Artificial Intelligence: An Interdisciplinary Revolution”. It aims at **exploring artificial intelligence and its various scientific applications**.

In order to support this reflection, the **CCSD and the SciCoS are conjointly launching the "Data Science Impulse" grant, intended to support the development of a project led by an interdisciplinary team of UNIGE researchers, on the theme of the year**. This impulse grant, in the amount of CHF 20,000.- (in scientific computing support) , aims to support the maturation or consolidation of a project, with a view to its future submission to other Swiss or international research funding programs.

Who is eligible for "Data Science Impulse"?

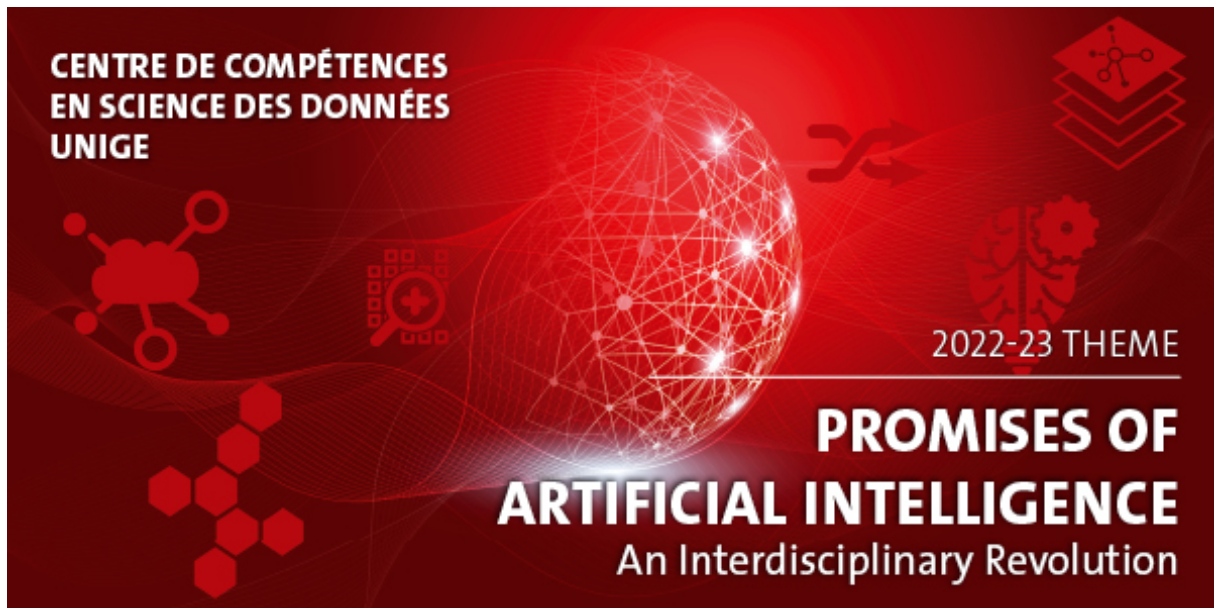
All researchers from the University of Geneva proposing a project related to data science and to the annual theme are eligible for the "Data Science Impulse" grant. For 2022-2023, the project must be capable of developing an innovative scientific method and / or deepening and shedding light on a research question related to artificial intelligence. It must also be supported by an interdisciplinary team made up of UNIGE researchers from different Faculties / departments / sections.

Call opening and closing dates

The call for the "Data Science Impulse" will open on 13 September 2022. It will be closed on 30 November 2022 at midnight.

Contact

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Artificial intelligence (AI) is synonymous with the greatest promises and the greatest challenges for humanity. A constant object of imagination and fantasy, AI featured in many popular works long before it became a reality, works projecting dystopian and utopian futures of what could become a world governed by a superior intelligence that would exceed the capabilities of its creator. Today, AI has left the realm of mere intellectual projection to become an integral part of our digital landscape. There are traces of it everywhere: in the algorithm of an online shopping website, in facial recognition applications, or even behind a comment on a social network. Continuous rise in computing power combined with a considerable increase in the amount of computer data now available is what has made this transformation possible, by offering the capacity to train computers to learn and thus to develop an intelligence of their own. In the sciences, these new capabilities offer so many possibilities for rapid exploration and data processing that they can be seen as a truly promising revolution.

For this third edition of the Data Science Impulse Call for projects, the Data Science Competence Centre of the University of Geneva (CCSD) and the Scientific Computing Support (SciCoS) invite researchers from the University of Geneva to **submit an interdisciplinary research project on artificial intelligence and its various scientific applications**. In order to embrace the diversity of the work carried out at the UNIGE on this theme, this call will be articulated around **three dimensions of AI**:

- AI and the fundamental knowledge on which its development is based,
- AI as an applied tool in the context of a growing number of research projects, and
- AI as a research object in itself, which must be approached in a critical manner.

Within the first dimension, the CCSD and SciCoS would like to invite UNIGE researchers working on the **development of AI at a fundamental level** to submit. Whether it focuses on the creation of artificial intelligence architectures, the improvement of machine learning algorithms or the improvement of the technical tools used, all research on this topic (in particular in computer sciences and statistical sciences) is welcome. For the second dimension, they invite UNIGE researchers to explore the multiple **applications of artificial intelligence**, regarding the use of image, text, sound or graph processing techniques for classification, categorization or prediction. Finally, the third dimension is open to researchers **working to better understand the social, political, economic, legal and ethical implications of the advent of AI** and its growing use in society and in scientific circles.

Guidelines for “Data Science Impulse”

1. Grant description

Objective

The “Data Science Impulse” grant intends to offer support for scientific collaboration:

1. Proposing a project related to data science and to the annual theme likely to develop an innovative scientific method and / or to deepen and shed light on a research question linked to Artificial Intelligence.
2. Formed around an interdisciplinary team, made up of UNIGE researchers from different Faculties / departments / sections.

What is offered

The project selected by the evaluation committee will receive an impulse grant of CHF 20,000.-.

This impulse grant is conjointly offered by the CCSD and SciCos, which respectively provide to recipients seed funding (CHF 10'000.-), in the form of real money, and in-kind supports (CHF 10'000.-), in the form of an equivalent amount of working hours.

What is expected

The team awarded the impulse grant will be expected to:

- Actively participate in the activities of the Data Science Competence Center
- Present their primary results during the UNIGE Data Science Days (September 2023)
- Systematically mention the support of the Data Science Competence Center and the Scientific Computing Support in publications associated with the project

Duration and reports

The project supported by the “Data Science Impulse” grant must start upon receipt of funds, or by 1 April 2023 at the latest. The starting date of the project must be communicated in writing to the CCSD Program Manager. The project must be completed by 31 March 2024 at the latest. Recipients will participate in meetings every three months to keep the CCSD and SciCoS informed of the progress of the project.

2. Selection criteria

Project proposals will be assessed based on the following criteria:



1) Compliance with the objectives of the call for projects

The proposals must be structured around the following three key aspects of the "Data Science Impulse" call for projects:

- a) The project must use an approach involving data science (as defined on the [CCSD website](#))
- b) The project must deal with artificial intelligence (in the sense specified by the call)
- c) The project must have an interdisciplinary dimension, through the collaboration of UNIGE researchers.

2) Academic and social relevance of the project

The projects will be assessed based on their academic and social relevance. They must be likely to develop a scientific method and / or to deepen and shed light on an innovative research question.

3) Skills of the applicants and feasibility of the project

Applicants (with the support of SciCoS) must be able to carry out all the activities necessary for the successful completion of their project, whether these are of a technical, scientific or operational nature.

The proposal must be convincing in regards to its technical, human and temporal feasibility, and the expected role played by SciCoS team (application development, operational support, etc.)

4) Medium-term project development strategies

The "Data Science Impulse" grant aims to support the early stages of development of interdisciplinary projects in data science. As such, it is crucial that applicants include obtaining this fund in a medium-term financing strategy, which can in particular be based on future submission to other Swiss or international research funding programs.

3. Selection process

Submission process

Applicants are invited to submit their project before 30 November 2022 at midnight by sending it to the following address: ccsd@unige.ch.

Proposals must be submitted using the project submission form provided on the CCSD website at the following address: <https://www.unige.ch/datascience/en/research/data-science-impulse/>

Assessment process

The proposals will be assessed by an evaluation committee composed of a representative of each Faculty of the University of Geneva. This committee will meet in January 2023 and its decision will be made public no later than 15 February 2023. Teams will also be informed of rejection decisions on the same date (reasons for non-selection will not be specified).

4. Grant management



Grant transfer and in-kind support

As soon as the project is selected and the Grant letter signed, the CCSD will transfer the entirety of the seed funding part of the Grant to SciCoS. The in-kind support part of the Grant, provided by SciCoS, will start at the same time.

Duties of the applicants

Every three months after the launch of the project, a meeting between the applicants, the CCSD and SciCoS will be organized to take stock of the scientific activities carried out. Six months after the start of the project, applicants are expected to send to the CCSD Program Manager a mid-term financial report. By the end of June 2024 at the latest, applicants are expected to submit a final activity and financial report, as well as a short report concerning the results obtained and the prospects made possible by the support of the CCSD and SciCoS. This short report will be published on the CCSD website.

Authorized expenses of the seed funding part of the Grant

The seed funding part of the “Data Science Impulse” grant (CHF 10’000.-), provided by the CCSD, will be directly used to acquire the support of SciCoS, such as dedicated application development, high performance computing operational support, etc.

If any doubt arises about the proper use of the grant, applicants are required to contact the CCSD Program Manager for a discussion prior to incurring any expense.