The Research Council of Norway

Evaluation of Mathematics, ICT and Technology 2023-2024

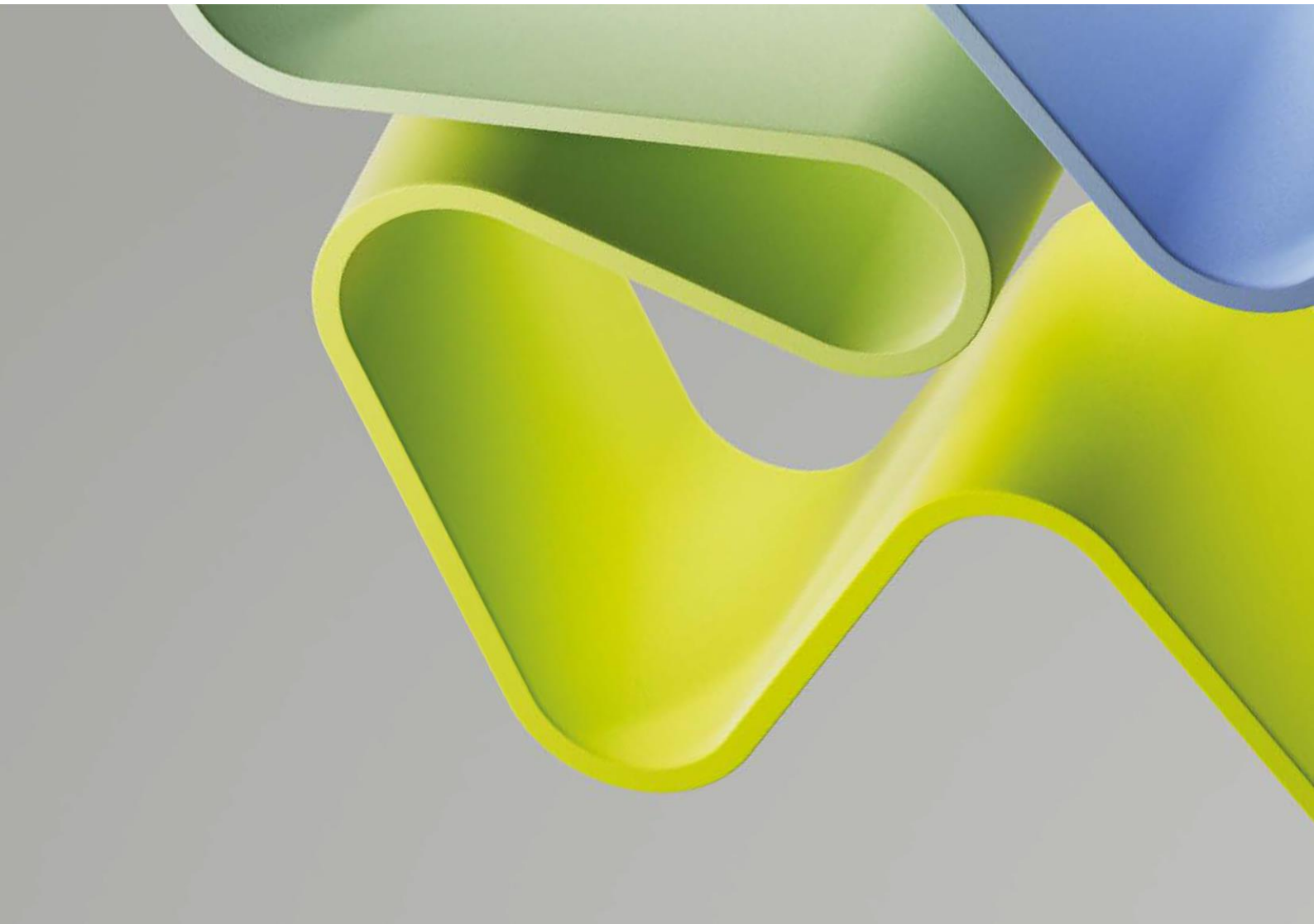
Evaluation Report for Administrative Unit

Administrative Unit: **Department of Computer Science and Computational Engineering (IDBI)**

Institution: **UiT The Arctic University of Norway**

Evaluation Committee Higher Education Institutions 2

December 2024



Contents

Statement from Evaluation Committee Higher Education Institutions 2

The members of this Evaluation Committee have evaluated the following administrative units at the higher education institutions within Mathematics, ICT and Technology 2023-2024 and has submitted a report for each administrative unit:

- Department of Computer Science and Computational Engineering (IDBI), UiT The Arctic University of Norway
- Department of Automation and Process Engineering (IAP), UiT the Arctic University of Norway
- Department of Electronic Systems (IES), Norwegian University of Science and Technology (NTNU)
- Department of ICT and Natural Sciences, Norwegian University of Science and Technology (NTNU)
- Department of Information Security and Communication Technology (IIK), Norwegian University of Science and Technology (NTNU)
- Department of Engineering Cybernetics (DeptCybernetic), Norwegian University of Science and Technology (NTNU)
- Department of Information Systems (IIS), University of Agder (UiA)
- Department of Computer Science, Oslo Metropolitan University (OsloMet)
- Faculty of Science and Technology (REALTEK), Norwegian University of Life Sciences (NMBU)
- Department of Science and Industry Systems (IRI), University of South-Eastern Norway (USN)
- School of Economics, Innovation and Technology (SEIT), Kristiania University College

The conclusions and recommendations in this report are based on information from the administrative units (self-assessment), digital meetings with representatives from the administrative units, bibliometric analysis and personnel statistics from the Nordic Institute for Studies of Innovation, Research, and Education (NIFU) and Statistics Norway (SSB), and selected data from the National survey for academic staff in Norwegian higher education and the National student survey (NOKUT). The digital interviews took place in the autumn 2024.

The members of the Evaluation Committee are in collective agreement with the assessments, conclusions and recommendations presented in this report. None of the committee members has declared any conflict of interest.

The Evaluation Committee consisted of the following members:

Professor Jan Canbäck Ljungberg
University of Gothenburg

Professor Bo Wahlberg (Chair)
KTH

Professor Nancy Pouloudi
Athens Univ. of Economics and Business

Professor Alessandra Costanzo
University of Bologna

Professor Torsten Braun
Universität Bern

Professor Stefan Wermter
University of Hamburg

Description of the Administrative Unit

The Department of Computer Science and Computational Engineering (IDBI) is an administrative unit belonging to UiT The Arctic University of Norway. Their focus is on the use of pure and applied mathematics to develop algorithms capable of solving difficult problems in the most computationally efficient manner.

IDBI consists of two research groups that explore two research areas: Simulations, and Artificial Intelligence. The unit is relatively small, and most of the staff are involved in several activities across the unit. IDBI hosts 23 personnel, eight of which are temporary positions (mostly PhD-students) and 22% of which are women.

The unit's research strategy complies with UiT's 2030 strategy, and is centred around three areas: the Arctic High North (capitalising on UiT's position as the world's northernmost university to lead on studies in this area), major societal challenges (developing innovative, democratic, and sustainable solutions), and talent development and diversity (helping students and staff to reach their potential, and using competence and diversity as a resource).

The unit provides higher education on all three levels (bachelor, master, and Ph.D.). The subjects belong to the engineering discipline. The study plans build on the Norwegian national framework plan and guidelines for engineering education, which are established at a high international level. IDBI provides computer science engineering research and education to the region of northern Norway. As part of UiT, IDBI's goals are to contribute to research-based knowledge in society, and to make all academic publications accessible in open-access journals or repositories. To this end, the department's archived and gold open-access publications have increased from 20% in 2013 to 91% in 2022.

IDBI has a track record of projects and research papers conducted in collaboration with various partners. This has led to activities together with public, private and third sectors, and sometimes also across sectors. These collaborations have been and are still of high importance for the research at the department. Several Ph.D. students at the department have completed their projects within these collaborations.

The unit generally supports innovation and commercialisation. It is one of the department's strategic goals to help establish and develop business, especially local businesses. These small to medium sized companies are very important to rural areas and the local community. The faculty has a collaboration agreement with the local municipality. The department has experience collaborating with local innovation support offices, and some of the work of past students has led to start-up companies.

During the 2018-2022 period, IDBI's research and education activities were funded by the Ministry of Education (24%), RCN grants, contract research for local industry and public bodies and international grants (EU and other). In their self-assessment, IDBI identified the following opportunity: the department's competence on numerical computations, efficient algorithms, AI, software development, and simulations, is sought after by many actors in industry, academia, and institute sectors. This can be utilised to team up and establish consortia in several application areas, which can lead to multiple sources of funding and business areas.

Overall Assessment

The Department of Computer Science and Computational Engineering (IDBI) is an administrative unit belonging to UiT, The Arctic University of Norway. IDBI claims to focus on research topics related to the arctic / high north. This strategy seems to be more mostly addressing the collaboration with local industry and organisations from the public sector. Those collaborations are very strong in terms of supporting theses work of IDBI's students as well as addressing specific real-world problems of local industry and public sector. Another strength is definitely the education offered in the high north / arctic region to generate workforce needed by local industry and public sectors.

IDBI has two subgroups focusing on Artificial Intelligence (AI) and Simulation, although the Simulation subgroup addresses a very (and probably too) wide set of research topics including material science, mathematics, 3D printing, manufacturing etc. The AI topic is very much focusing on solving application problems by using AI, but methods and mechanisms to improve AI systems and software are not in the focus of IDBI.

The impact of the research is mainly on the collaborations with local partners by solving specific problems for local industry and public sector organisations. The scientific impact, in particular, in terms of publications, is modest and below standards valid for internationally visible units. Open science principles, especially considering publications, have been well addressed. Other activities such as providing open-source software or research data management are somewhat unclear.

Research funding is in general low. This applies for all kinds of funding to the administrative unit, such as national and international research funding as well as industry funding.

The administrative unit consists of a good number of professors, but the number of PhD students is relatively low. The professors have a good amount of their time available for performing research. This depends on the level of each professor. Some attempts have been made to improve gender equality, with some room for improvements. There are some good measures to support student and staff mobility as well as training.

IDBI is strong in local industry collaborations and also has a good number of links to (inter)national universities. There is more potential from those collaborations in terms of increasing the research funding and improving the scientific publication output.

The involvement in (inter)national research infrastructures is low, considering both use and offering such infrastructures. For many research activities research infrastructures from local partners can be used.

The impact on society is mainly in terms of providing educational programs and local industry collaboration. More general societal goals such as UN SDGs are mentioned in the self-evaluation, but there is little evidence of how those have been addressed in recent research activities.

The Terms of Reference for the administrative unit is attached to the report.

Recommendations

The committee recommends the following actions to IDBI for the near future:

1. **Develop general Research strategy**

- The administrative unit should continue their overall strategic goals but strengthen their profile such as the specific relation of the research to topics relevant to the arctic / high north in a more general way.
- The strategic goal on supporting societal challenges needs to be improved and made more concrete by specific research topics. This includes also more general societal goals such as UN SDGs, in particular energy-efficient software and systems.

2. **Develop concise research topics for subgroups**
   - The Simulation subgroup addresses too wide an area of research topics. The profile and scope of the subgroup should be shaped in a more concise way.
   - The Artificial Intelligence subgroup should not only investigate how to apply AI in different application areas but also perform more basic research and solve more AI-specific problems, possibly related to sustainability and green energy production as mentioned as important challenge in the self-evaluation report.
3. **Increase funding to attract more PhD students**
   - The ratio PhD student per professor should be increased. A target value could be at least one PhD student per professor. While the number of industrial PhD students seems to be good, the number of more academically oriented PhD students should be increased. This also requires acquisition of more basic research funding.
   - IDBI should strengthen activities to get more research funding in general. This includes EU but also RCN funding. Increasing the research funding is also a requirement to achieve the target of having one PhD student per professor.
   - There is more potential for funding from the industry collaborations – currently industry is mainly contributing with in kind contributions but less cash flow. Consulting services could be provided to increase funding income.
4. **Improve Quality of Research**
   - Research and publication quality should be addressed and improved by improving the quality of publications to be published in international top-tier conferences and journals.
   - IDBI should consider whether it is possible to take advantage of nationally and internationally available research infrastructures, also in order to improve research experiments. Simultaneously, IDBI should consider making internally available research infrastructures also available to other partners. This should be done in order to strengthen IDBI's attractivity as a partner for (inter)national collaborative research projects.
5. **Improve Societal Impact**
   - While several spin-offs were initiated by students, spin-offs initiated by professors should be considered as well.
   - The policy and development of open-source publications should be continued. More concrete activities and reporting on open-source code availability and open research data availability should be performed.
6. **Improve collaboration**
   - While the links to local and regional industry and public organisations seem to be good, relations to national and international academic partners need to be strengthened. This can be done by joint projects, staff and student exchange programs, as well as joint publications, for example. The goal should be strengthening international visibility, increase research funding and become involved in scientific publication activities improving the scientific publication output.

7. **Develop and improve researchers and diversity**
    - The number and ratio of female professors need to be increased.
    - More mobility programs and activities for staff and students need to be established, preferably to excellent international universities.

1. Strategy, Resources, and Organisation of Research

The administrative unit aims to disseminate knowledge about the arctic and high north area with ambitions to develop internationally visible knowledge and competence about research for the arctic and high north region. IDBI aims to focus on the competence development of research staff and students.

IDBI is responsible for bachelor education in CS engineering, applied CS, and engineering design, which also has an impact on the AU's research directions. Professors perform outreach activities and supervise master and PhD students.

The administrative unit is relatively small, consisting of one group with two subunits, namely Simulations and Artificial Intelligence (AI). Professors can spend time on research based on their level, between 20 and 50 %.

The research group received a relatively modest evaluation, in particular concerning research quality and societal impact.

IDBI has several collaborations, mainly with local industry partners.

IDBI has a clear policy for open science, which can be seen in the provided statistics of the self-evaluation report.

IDBI developed from a college with strong applied research focus and has been integrated into a more basic research-oriented university.

1.1 Research Strategy

In the self-assessment report the total research strategy description is very short. The research strategy is superficially defined around three items:

- knowledge development about the arctic north and high north
- major societal challenges concerning climate, environment, food, demographic development
- talent development and diversity

Those three items are in principle sound but have not been described in much detail. In particular, the self-evaluation report does not describe concrete future research topics or directions of the two subunits on Simulation and Artificial Intelligence The relation to the arctic and high north seems to be more on the relevance to local industry than to research topics related to the high and arctic north.

Based on the Committee's interview with the IDBI, some more details could be identified and are described below.

The Simulation subunit deals with a wide area of topics such as mathematics, Internet of Things, Virtual Reality, additive manufacturing, geometric modelling, 3D printing, and material science, which might look too broad and do only partly have strong relevance to Simulation.

One reason for the clear lack of a research strategy might be the ongoing generation change. There are several retirements and new people to be hired in the near future (based

on information during the committee's interview), with an expected reconsolidation of research topics and areas.

IDBI has many applied research activities with regional industries. Students do their theses in 85-90 % of the cases with such partners. Many SMEs approach IDBI to get help in solving their problems but contribute to the common research activity mainly with in-kind contributions only.

Research quality and publications of the research group were both evaluated as low. According to the group's evaluation report, only a small number of professors were active in publications and many of the publications appeared in national conferences only. According to the NIFU report (https://nifu-evalmit.netlify.app/rapporter/uit_computer_science_and_computational_engineering), the number of publications per year published by the IDBI (20-30 p.a.) as well as the modified author share metrics (10-20) are relatively low for an administrative unit with that size. Those numbers have been rather stable during the last eight years. There are no publications in top journals nor top conferences in the area of computer science.

Recommendations to the administrative unit:

- The administrative unit should continue their overall three strategic goals but strengthen their profile such as the specific relation of the research to topics relevant to the arctic / high north in a more general way.
- The strategic goal on supporting societal challenges needs to be improved and made more concrete by specific research topics
- The Simulation subgroup addresses too wide an area of research topics. The profile and scope of the subgroup should be shaped in a more concise way.
- Research and publication quality should be addressed and improved by improving the quality of publications to be published in international top-tier conferences and journals.

1.2 Organisation of Research

The UiT faculty includes five research groups, with IDBI being one of them. IDBI is the administrative unit consisting of one research group and two subunits; Simulations and Artificial Intelligence. IDBI considers itself as small although consisting of 16 professors (full or associate), which is a good number for an administrative unit. The number of PhD students is very low considering the number of professors (7 PhD students are reported) meaning that in average only every second professor has a PhD student. The share of female professors is around 20 %, which is typical for the engineering sector, but there is significant room for improvement.

The research is very applied and mostly performed in collaboration with local industry. Such collaborations are often based on student theses performed at the industry partner or when local industry partners launch joint research activities in order to solve their problems.

The AU has some good activities to support development and training of researchers on all levels. Examples are training courses, R&D seminars by faculty, project participation organised by the researchers.

Depending on their level, 20-50 % of the professor's time can be spent on research related activities, which is quite a good amount to perform some significant research activities.

Recommendations to the administrative unit:

The research areas of both subgroups need to be improved:

- As described in section 1.1, the Simulation subgroup's profile needs to be more concise and focused on less topics.
- The Artificial Intelligence subgroup should not only investigate how to apply AI in different application areas but also perform more basic research and solve more AI-specific problems. As sustainability and green energy production has been mentioned as important challenge in the self-evaluation report, one possibility is to investigate energy-efficient AI.
- The ratio PhD student per professor should be increased. A target value could be at least one PhD student per professor. This might require increasing the research funding.

1.3 Research Funding

The research funding is mainly from industry partners and the public sector. Most of them are from national partners. A small amount of funding has also been received from RCN or the EU. This reflects the more practical and industry-oriented research with lower focus on basic research.

Overall, the funding received is below 3 MNOK over five years. Considering the large number of professors (16), the average per professor and year is below 40 kNOK. This is a very low value compared to other administrative units considered in the evaluation process. In terms of €, the overall reported research funding (EU, RCN, industry) amount for 2018-2022 is around 235 k€. This is equivalent to 3 k€ per professor and year. Again, this is a very low value.

Despite the strong industry and public sector relations the received funding from industry or the public sector is also modest. There seems to be certain unused potential by existing collaborations with industry and the public sector that could be better used for getting funding from industry or the public sector.

Recommendations to the administrative unit:

- IDBI should strengthen activities to get more research funding in general. This includes EU but also RCN funding. Increasing the research funding is also a requirement to achieve the target of having one PhD student per professor.
- There is more potential for funding from the industry collaborations – currently industry is mainly contributing with in kind contributions but less cash flow.

Consulting services could be provided to increase funding income.

1.4 Research Infrastructures

The IDBI AU does not provide or make use of (inter)national research infrastructures. Section 2.2 of the self-evaluation report does not contain any participation or access to research infrastructures. It only mentions that FAIR principles for research data management according to UiT's guidelines are considered.

According to the interviews conducted with the administrative unit, they currently make use of some research infrastructures that are available from their industry partners.

Recommendations to administrative unit:

- The AU should consider whether it is possible to take advantage of nationally and internationally available research infrastructures.
- Simultaneously, IDBI should consider making internally available research infrastructures available to other partners.
- IDBI should consider maintaining and provide research infrastructures to collaboration partners in order to strengthen their attractivity as a partner for (inter)national collaborative research projects.

1.5 National and international collaboration

There are several collaborations at the national and regional levels with industry and public sectors. These include student projects and problem-oriented research activities to solve real-life problems. This is a very interesting approach, but the potential of these collaborations has not been fully exploited for both funding acquisition and excellent publications.

The nature of the IDBI's international collaborations is unclear. There seem to be mainly loose collaborations in most cases without joint publications, personal networking, and staff mobility. There are no important or significant international research projects, which could help to increase the AU's international visibility.

Such visibility could improve the potential to acquire PhD students and become involved in international research activities.

Recommendations to administrative unit:

While the links to local and regional industry and public organisations seem to be good, relations to national and international academic partners need to be strengthened. This can be done by joint projects, staff and student exchange programs, and joint publications, for example. The goal should be to strengthen international visibility, increase research funding and become involved in scientific publication activities improving the scientific publication output.

1.6 Research staff

The AU has some good plans for staff and student development such as training courses and R&D seminars.

There are less than 20 % of female professors on full or associate professor level, which is not unusual for computer science and engineering, but still has some room for improvement.

Some staff mobility is supported by international contacts, but those contacts are limited compared to the size of the AU.

PhD students are mainly industry PhD students doing their work in industry. Those are also mainly funded by industry directly. Those PhD students tend to work on more practically relevant research problems. More basic research activities could be performed.

The administration overhead seems to be reasonably low, although more administration support is desired according to the comments raised by AU representatives in the interview with the committee.

Recommendations to the administrative unit:

- The number and ratio of female professors need to be increased.
- More mobility programs and activities for staff and students need to be established, preferably to excellent international universities.

- While the number of industrial PhD students seems to be good, the number of more academically oriented PhD students should be increased. This also requires acquisition of more basic research funding.
- The PhD student / professor ratio should be significantly increased with a target of having at least one PhD student per professor

1.7 Open Science

The AU has a good strategy for open access publications and the provided numbers in the self-evaluation report clearly show that open access is steadily improving. In 2022 more than 90 % of the publications were archived publicly or published by gold open access policies.

There were no details given about open-source code publications in the self-assessment report, and so the Committee has no comment on this.

IDBI has a clear policy on research data and offers a dedicated portal to support open research data. However, it is not described how well this infrastructure is used, and therefore the Committee cannot comment on this.

Recommendations on how to promote open science:

- The policy and development of open-source publications should be continued.
- More concrete activities and reporting on open-source code availability and open research data availability should be performed.

2. Research production, quality and integrity

The description of the research activities in different sections (and in 2.1 in particular) of the self-evaluation and the description of the subgroups do not match well. While there are two subgroups (on Simulation and Artificial Intelligence) listed, research topics include a large variety of topics are mentioned for the Simulation subgroup covering geometric modelling, numerical methods, interpolation and approximation theory. The relation to simulation is somewhat unclear and the topics are (too) wide.

The administrative unit's self-assessment report mentions pure and applied mathematics as a focus area. The research areas in computer science include geometric modelling, AI/machine learning, numerical methods, and interpolation and approximation theory, according to the self-evaluation report. The research related to engineering design includes mathematical analysis, inequalities, Fourier methods, and homogenisation theory. It is difficult to understand how this fits to AI and/or Simulation.

In the interview with the committee the following research topics were mentioned: mathematics, Internet of Things, Virtual Reality, additive manufacturing, mathematical methods, geometric modelling, everything connected to 3D printing, material science.

Overall, the research topics are not well aligned and structured. A clearer research strategy needs to be developed.

The research area of AI is more focused and addressing the use of AI in certain application areas. Some activities in digital twins and smart cities are performed, also allowing for collaboration with municipalities.

Research is mainly done with public or private (industry) partners, giving the researchers access to real-world problems and research infrastructure available from the partners.

The AI subgroup has some good development plans to increase the number of PhD students. It is somewhat unclear what specific relation the topics in the AI subgroup have to

the strategy goal of supporting research in the arctic / high north. Some future activities in AI model development are planned, but topics lack somewhat scientific details and novelty. The research output in terms of publication metrics is modest in most criteria. According to the NIFU report the number of publications per professor has been around 1 during the last years with small changes during that period. The share of 10 % most cited publications has been at 0 % until 2020, showing limited impact. The number of (inter)national coauthors increased during the last years showing more collaborations.

2.1 Research quality and integrity

Research group Simulations overall assessment

The group has been active for long time, including as part of national research foci. During the last few years, however, it has tried to redirect research activities, although with limited success. Research emphasis is on geometric modelling, programming, visualisation and numerical simulations – overall quite generic. While characterised by being a large research 17 permanent researchers, its research output is very limited, both in quantity and in quality, measured, among other ways, through a very limited external funding. Overall, it appears isolated, with a substantial number of inactive researchers, and with a narrow research focus with limited impact. It has had some success with attracting PhD students, currently 3, but the overall number is not reported. With 17 faculty members this seems a very small number. Of the 12 self-reported publications, only a very small number of the 17 faculty members are listed as co-authors and, remarkably, not a single one of the 8 professors. The group contributes to the teaching of 2 Master courses and possibly advising of master students. However, the self-evaluation report offers no quantitative measures, e.g. on number of students or master theses advised. The external funding very limited and declining – for a group this size that should be major concern. There is no evidence offered for public outreach and engagement with society beyond teaching and mentoring PhD students.

3. Diversity and equality

The self-assessment report claims that gender balance is not bad, but the ratio of female professors is below 20 %. Although in engineering and computer science those numbers are typically on a low level, there is room for improvement.

Other than this, diversity and equality are only marginally addressed in the self-evaluation report. There is an action plan for the university and a pointer to UiT policies, but no real numbers are given for which the Committee can offer their evaluation.

4. Relevance to institutional and sectorial purposes

IDBI’s main contributions to sector-specific objectives are based on education and industry collaborations:

- IDBI supports education on bachelor, master and PhD level in the education and technology areas. The student thesis projects are a good means of providing education with practical and societal relevance.
- IDBI follows UiT’s central action plan for innovation and commercialisation. Although many collaborations on student thesis level exist, those collaborations did not result in significant financial value and benefits of the AU.

There are some general plans for innovation and commercialisation, but there are only a very few concrete examples for that provided in the self-assessment report. One example for commercialisation is the application of AI research results in the e-health sector.

The faculty has collaboration agreements with the municipality. The AU has some experience with collaboration with local support offices. Some students were involved in setting up start-up companies. More activities, also by faculty members, in creating start-ups could be considered.

IDBI's main impact seems to be provision of engineering and technology research and education to Northern Norway.

Considering training and mentoring: The High North Academy offers various training courses and R&D seminars are offered by the faculty and central research office, according to the self-evaluation report.

UiT has several policy documents on innovation and entrepreneurship, but AU's contributions are unclear.

5. Relevance to society

Relevance to society is limited to teaching, according to AU's self-assessment report.

No impact cases were provided, and the report contains only a small, generic outline of societal relevance of the study programs and education which is not sufficient for the Committee to evaluate.

However, some general societal topics such as energy-efficiency are mentioned, although those were not addressed in much detail before. The topic of energy production was only mentioned briefly as a strength in the self-evaluation report's SWOT analysis. In section 5, the topic of green energy is discussed in more detail highlighting and emphasising the need for more energy-efficient algorithms and computer software. This topic could be promising to be investigated in future in more detail, but concrete activities into such direction need to be defined, e.g. making AI software and systems more energy efficient.

Section 5 is motivating the need for energy-efficient algorithms and software, but it does not become clear what contributions to this topic have been achieved in the past.

Construction and material science are mentioned in another section of the report, but the relation to other research activities in AI and Simulation is somewhat unclear, and the Committee has not been able to evaluate this.

5.1 Impact cases

No impact cases were provided.

Methods and limitations

Methods

The evaluation is based on documentary evidence and online interviews with the representatives of Administrative Unit.

The documentary inputs to the evaluation were:

- Evaluation Protocol that guided the process
- Terms of Reference
- Administrative Unit's self-assessment report
- Administrative Unit's impact cases
- Administrative Unit's research groups evaluation reports
- Bibliometric data
- Personnel and funding data
- Data from Norwegian student and teacher surveys (only for HEIs)

After the documentary review, the Committee held a meeting and discussed an initial assessment against the assessment criteria and defined questions for the interview with the Administrative Unit. The Committee shared the interview questions with the Administrative Unit two weeks before the interview.

Following the documentary review, the Committee interviewed the Administrative Unit in an hour-long virtual meeting to fact-check the Committee's understanding and refine perceptions. The Administrative Unit presented answers to the Committee's questions and addressed other follow-up questions.

After the online interview, the Committee attended the final meeting to review the initial assessment in light of the interview and make any final adjustments.

A one-page summary of the Administrative Unit was developed based on the information from the self-assessment, the research groups' evaluation reports, and the interview. The Administrative Unit had the opportunity to fact-check this summary. The Administrative Unit approved the summary with minor adjustments.

Limitations

The Committee judged that the Administrative Unit's self-assessment report was insufficient to assess all evaluation criteria fully, and some information gaps remained after the interview with the Administrative Unit.

List of administrative unit's research groups

Institution	Administrative Unit	Research Groups
The Arctic University of Norway	The Department of Computer Science and Computational Engineering	Simulations and AI

Terms of Reference (ToR) for the administrative unit

The board of Faculty of Engineering Science and Technology mandates the evaluation committee appointed by the Research Council of Norway (RCN) to assess Department of Computer Science and Computational Engineering based on the following Terms of Reference.

Assessment

You are asked to assess the organisation, quality and diversity of research conducted by Department of Computer Science and Computational Engineering as well as its relevance to institutional and sectoral purposes, and to society at large. You should do so by judging the unit's performance based on the following five assessment criteria (a. to e.). Be sure to take current international trends and developments in science and society into account in your analysis.

a) Strategy, resources and organisation

b) Research production, quality and integrity

c) Diversity and equality

d) Relevance to institutional and sectoral purposes

e) Relevance to society

For a description of these criteria, see Chapter 2 of the mathematics, ICT and technology evaluation protocol. Please provide a written assessment for each of the five criteria. Please also provide recommendations for improvement.

In addition, we would like your report to provide a qualitative assessment of Department of Computer Science and Computational Engineering as a whole in relation to its strategic targets. The committee assesses the strategy that the administrative unit intends to pursue in the years ahead and the extent to which it will be capable of meeting its targets for research and society during this period based on available resources and competence. The committee is also invited to make recommendations concerning these two subjects.

Documentation

The necessary documentation will be made available by the mathematics, ICT and technology secretariat at Technopolis Group.

The documents will include the following:

- a report on research personnel and publications within mathematics, ICT and technology commissioned by RCN
- a self-assessment based on a template provided by the mathematics, ICT and technology secretariat

Interviews with representatives from the evaluated units

Interviews with the Department of Computer Science and Computational Engineering will be organised by the evaluation secretariat. Such interviews can be organised as a site visit, in another specified location in Norway or as a video conference.

Statement on impartiality and confidence

The assessment should be carried out in accordance with the *Regulations on Impartiality and Confidence in the Research Council of Norway*. A statement on the impartiality of the committee members has been recorded by the RCN as a part of the appointment process. The impartiality and confidence of committee and panel members should be confirmed when evaluation data from Department of Computer Science and Computational Engineering are made available to the committee and the panels, and before any assessments are made based on these data. The RCN should be notified if questions concerning impartiality and confidence are raised by committee members during the evaluation process.

Assessment report

We ask you to report your findings in an assessment report drawn up in accordance with a format specified by the mathematics, ICT and technology secretariat. The committee may suggest adjustments to this format at its first meeting. A draft report should be sent to the Department of Computer Science and Computational Engineering and RCT. The Department of Computer Science and Computational Engineering should be allowed to check the report for factual inaccuracies; if such inaccuracies are found, they should be reported to the mathematics, ICT and technology secretariat within the deadline given by the secretariat. After the committee has made the amendments judged necessary, a corrected version of the assessment report should be sent to the board of Faculty of Engineering Science and Technology and the RCN no later than two weeks after all feedback on inaccuracies has been received from Department of Computer Science and Computational Engineering.

Appendices

1. Description of the evaluation of EVALMIT
2. Invitation letter to the administrative unit including address list
3. Evaluation protocol
4. Template of self-assessment for administrative unit (short-version)

The Research Council of Norway

Norges forskningsråd
Besøksadresse: Drammensveien 288
Postboks 564
1327 Lysaker

Telefon: 22 03 70 00

post@forskningsradet.no
www.forskningsradet.no

Publikasjonen kan lastes ned fra
www.forskningsradet.no/publikasjoner

Design: [design]
Foto/ill. omslagsside: [fotokreditt]

ISBN 978-82-12-04139-4 (pdf)