

Summary assessment statement

Department of Information Technology at Uppsala University

2021

This assessment report covers seven (of eleven) PhD education subjects at the department of Information Technology: Computer Science, with a specialisation in Computing Education Research; Computer Science, with a specialisation in Human-Computer Interaction; Computerised Image Processing; Electrical Engineering, with a specialisation in Automatic Control; Electrical Engineering, with a specialisation in Signal Processing; Scientific Computing; Scientific Computing, with a specialisation in Numerical Analysis. The other four PhD programmes were dealt with in the audit by the Swedish Higher Education Authority, Universitetskanslersämbetet, UKÄ, in 2017.

Given the unified routines for PhD education, in combination with the self-evaluation being written without differentiation between the different subject, these are mostly treated jointly.

Members of the assessment panel

Maja Elmgren, associate professor, Uppsala University, Sweden (convening chair),
Michail Giannakos, professor, NTNU – Norwegian University of Science and Technology, Norway,
Elias Jarlebring, associate professor, KTH – Royal Institute of Technology, Sweden,
Erik Steinvall, PhD student, Umeå University, and PhD ombudsman, Umeå Student Union of Science and Technology, NTK, Sweden, and
Karl Åström, professor, LTH, Lund University, Sweden.

Basis for the assessment

The evaluation, conducted in spring 2021, was based on extensive documentation including the self-evaluation report, ISP template, list of supervisors and PhD candidates, earlier survey results and assessment documents and relevant webpages of the IT department, as well as the insights given during the remote site visit, which took place the 28th and 29th of April, 2021.

Strengths

The assessment panel is overall impressed by the PhD education. The department has put considerable effort into solidifying the PhD education and has strived to make the structure for PhD education similar across the seven subjects. The PhD education program is well-aligned with the international standards and the Higher Education Ordinance. Soft structures for assistance do exist and PhD students have to a certain degree a sense of ownership and participation in the programme. The department has several strong and internationally recognized research groups, with supervisors that are committed to research and PhD education and with supervisor training.

The work on equal opportunities and gender balance was much appreciated. The department has several activities to lessen potential biases, improving gender balance.

There is a method in place for regular revision of the subject areas and the department has made substantial improvements during the last 5-10 years. Positive points include (i) the supervisor college – a group of supervisors within each education subject that meets yearly (ii) the ISP and the progression matrix - that helps PhD students and supervisors with PhD student progression, (iii) the senior group – 2-3 independent senior researchers appointed to each PhD student, (iv) the individual study plan meetings, (v) the mentorship programme - each PhD student is assigned a senior PhD student as a mentor and (vi) the structure at the department.

The assessment panel also appreciates that the department views the development of the PhD student as a primary result of a PhD programme, and not only focusses on the research output.

Areas of development

ISP: The ISP (especially the faculty wide template) causes considerable frustration, which spills over to the ISP process itself.

Stress/Planning: Lack of long-term planning regarding conference travel, courses and teaching is sometimes causing stress. This is especially significant for PhD students with children. Due to the pandemic there seem to be a slight increase in stress levels of the PhD students.

PhD courses: Long-term planning for PhD courses is especially important, including clarification of which courses fit a certain PhD student programme. Additional PhD courses were also requested.

PhD student representation: The interest in student representation activities at the department can be increased, such as participation in department board, equal opportunity board, ITDR and TNDR.

Division heterogeneity: Further unification between divisions, between research groups and between supervisors is appropriate (while some differences might be desired).

Recruitment of PhD students: Recruitment procedures and introduction routines are important investments for quality education and research, and should be prioritized.

Information and communication: There are challenges for PhD students in understanding the structure of the department and where decisions really are taken.

Authorship discussions: Authorship issues and other ethics issues could be more discussed.

Recruitment of faculty members: Hiring of new faculty members will help supervisors meet the need from the increased teaching load and allow more time for them in supervising PhD students.

Continuous development of supervisors: Further development of supervisors should be implemented at all divisions.

Recommendations for improvements

Continue the excellent work on the area of equal opportunities. The department has several activities to lessen potential biases, improving gender balance, ranging from practical things like the questions asked during the interviews to aspects of the working environment. This is especially important at divisions with skewed gender ratio. The department should encourage other departments to similar initiatives.

Further support the adoption of ISP, the matrix and the senior team mechanisms. Identify best practices on how to see those tools as supportive mechanisms for both student and supervisor, instead of the necessary evil. Create a faculty-wide web-based system that is easy to work with and still with the higher ordinance goals. Use ideas from other universities and focus groups initiative with the PhD students and supervisors who use the current template.

Improve the possibilities for the PhD students to plan their departmental work (e.g., help them to plan ahead their teaching duties and courses), and allow them to plan their time more effectively (e.g., focusing on their research and participation to conference).

Consider what PhD courses to give and recommend, and plan them well in advance. Investigate suggestions from PhD students. Proceed with the initiatives to create a course in sustainability, and integrated it fully into the PhD education. Clarify which courses that fit a certain PhD student programme. Keep the list of the available courses updated.

Continue the excellent administration support. The administration in contact with the relevant university services has organized several seminars to prevent (or discuss how to handle) increased stress levels in the PhD students' community.

Strengthen the PhD collegial/community contexts at the department. The interest can be increased by making it more worthwhile. Count student representational work as department work (within the 20%). Clarify the importance and benefits of engaging in accordance with the national learning objectives of PhD education.

Continue the unification between divisions when appropriate, and discuss which of the differences that are desired and therefore should be kept. Use role models and good examples from other divisions, when needed.

Establish routines for improving the recruitment process, onboarding, and empowerment of the PhD students, that will help them to better understand the organization and leadership. In addition, clarifying the responsibilities and expectations in the supervisors-student relationship will greatly improve students' onboarding. The planned department-wide task forces for common recruitment and introduction routines, should be prioritized. Good examples for improved gender balance should be spread between divisions. Discuss authorship issues and corresponding ethics. Follow up with discussions within the supervisor group, within the divisions/groups and during supervision meetings on how to decide about co-authorship.

Proceed with the indented hiring of new faculty members. This is crucial for the department in order to cope with the increased teaching load and allow more time for faculty members to supervise PhD students, and also lessen the teaching load of PhD students.

Encourage further development of supervisors: Ensure that all divisions have supervisory colleges for exchange of experiences and further development of supervisors. Offer a platform for supporting the discussion of issues with regards to PhD students/supervision expectations and attribution of responsibility (e.g., clear milestones, papers and authorship requirements and responsibilities).