

Master thesis assessment form

Student name:

Student ID:

Programme: Master Sc. in Artificial Intelligence

Thesis title:

Date thesis defence:

Rubrics

Academic Skills

Evaluation Criterion	Qualification	Grade	Fail	6	7	8	9 to 10
Academic skills							
Problem statement	AI6 DS6		No problem statement is given, or the problem statement is too unclear to be of use.	A problem statement is given that defines a clear goal for the thesis.	Criteria 6 + including the context in which the goal should be reached.	Criteria 7 + Related work and/or state of the art were investigated.	Criteria 8 + The difference between the goals and/or context of the thesis with existing solutions (e.g. found in literature) were studied and clearly described to support the problem definition, clearly indicating the innovative part of the thesis task.
Research questions	AI6 DS6		Not researchable (e.g. too broad) and/or relevant academic research questions.	At least one of the research questions present is relevant.	At least three research questions are present and relevant.	Criteria for 7 + research questions are well-positioned in the research context.	Criteria for 8 + research questions are well-positioned in the literature.
Determine the current state of the art	AI14, AI10, AI17 DS15, DS11, DS18		Most related work and possible solutions had to be brought to attention by the project supervisor.	Student was able to find relevant literature and software applications through the library or the Internet.	Criteria for 6 + Student was able to determine the state-of-the-art.	Criteria for 7 + The student was able to autonomously judge the applicability or shortcomings of discovered related work.	Criteria for 8 + This discovery was for a large part autonomous, with little intervention or hints required from the thesis supervisor, possibly even discovering relevant work previously unknown to the thesis supervisor.
Research quality	AI1, AI2 DS1, DS2		Insufficient. Student should not have presented in the first place. Results are unreliable and cannot be communicated to the outside world without redoing them.	Student has familiarized the topic. Several weak spots in conducted research / thesis writing. Results must be checked and parts redone before they can be communicated to the outside world.	Student has mastered the topic, research contains no flaws but is not original. Results must be checked before they can be communicated to the outside world.	Some original research work has been performed. Described thesis research would be acceptable to be presented at a lightly reviewed workshop or conference.	Research has advanced state of the art. Described thesis research would lead to a publication in an international peer-reviewed journal or an international peer-reviewed conference.
Research difficulty	AI1, AI2, AI16, AI17 DS1, DS2, DS17, DS18		Trivial methods where used, which should be obvious to any student.	The research required the student to become familiarized with theory within the scope of the courses.	The research required the student to become familiarized with theory beyond the scope of the courses, but could have been within	The research required the student to become familiarized with theory beyond the scope of the programme.	The research itself is very theoretical or highly interdisciplinary requiring the student to read into both challenging and theoretical material well beyond the scope of the programme.

					the scope of the programme.		
Critical attitude	AI14, AI7, AI12, AI16 DS15, DS8, DM13, DS17		The student has no critical attitude towards the student's own results.	The student has limited critical attitude towards the student's own results.	Though the student has sufficient critical attitude towards the student's own results, he/she has a limited critical attitude towards the literature and/or domain experts.	The student has a good critical attitude towards the student's own results, the literature and/or domain experts.	Criteria 8 + this attitude is constructive and well-balanced.

Remarks on academic skills

Thesis form

Evaluation Criterion	Qualification	Grade	Fail	6	7	8	9 to 10
Thesis form							
Thesis structure	AI15 DS16		The structure is flawed in either not defining the problem, the conclusions not answering the research questions relating to the problem or the structure being illogical.	The thesis structure is in place, but shows flaws. The introduction defines the problem and lists some literature. There are methods, results and discussion sections, but the separation is flawed. Conclusions answer the research questions, but are weak.	The thesis structure is mostly clear, where the introduction defines the problem and lists some state-of-the-art. Methods, results and discussion are separate sections. Discussion interprets the results. Conclusions answer the research questions. Some flaws in this structure are present.	The thesis structure is generally clear, where the introduction defines the problem and sets it in terms of the state-of-the-art. Methods, results and discussion are mostly separated. Discussion interprets the results and places them in terms of the state-of-the-art. Conclusions answer the research questions.	The thesis structure is clear, where the introduction defines the problem, sets it in terms of the state-of-the-art and clearly indicates what the contribution of the thesis is. Methods, results and discussion are clearly separated. Discussion interprets the results and places them in terms of the state-of-the-art. Conclusions answer the research questions and are sharply defined.
Form, scientific writing and language use	AI15 DS16		Inconsistent grammar, incorrect spelling, poor structuring, weak scientific writing.	Some grammatical and/or spelling errors, logical structure, scientific writing is adequate.	Minimal grammatical and/or spelling errors, structure supports argumentation.	Good use of grammar, correct spelling, well-designed transitions between paragraphs.	Flawless use of grammar and spelling, reads like an academic journal article.
Bibliography	AI14, AI10 DS15, DS11		References and bibliography are not up-to-date, inadequate or not well-cited. In particular, if it is not clear what is taken from the literature or texts have been verbatim copied without citing, then an inquiry into plagiarism should be initiated.	A reasonable overview of the relevant literature is provided in the thesis. References are adequate, but not complete. Citations are there, but tend to be not at the most logical place.	References and citations give an overview of the relevant work. An attempt was made to include the state-of-the-art. Citations tend to be at the most appropriate points in the text.	References and citations cover most of the relevant publications and covers the most recent work. The citations are mainly at the most appropriate points in the text.	References and bibliography cover all relevant publications and state-of-the-art. Citing is done at appropriate points in the text.
Conciseness and completeness	AI15 DS16		The thesis is missing structure and content in general and it contains elaborate exposés that make the document hard to read.	The thesis is mostly readable and contains content and structure, but it is still lacking and/or some parts are too elaborate.	The thesis is well readable, but some structural elements and lacking and it is not always to-the-point.	The thesis is easy to read and has a good structure, but contains some paragraphs that do not contribute to the research questions at hand.	The thesis is well-written and to the point.

Remarks on thesis form

Thesis content

Evaluation Criterion	Qualification	Grade	Fail	6	7	8	9 to 10
Thesis content							
Research methods and justification	AI14, AI7 DS15, DS8		Poor or no description of data or methods, insufficient justification of the method chosen.	Sufficient description of data or methods, weak and/or somewhat artificial use of methods, limited justification of methods.	Adequate description of data or methods, correct and well-justified use of methods, shows methodological understanding.	Well-written description of data or methods, choice of method is well justified, shows deep methodological understanding.	Excellent description of data or methods, excellent methodological understanding, research is reproducible.
Statistical analysis / performance analysis of results (if applicable)	AI14, AI6 DS15, DS6, DS7		No statistical analysis of results was performed or statistical significance of results is not shown or disproved. In case different algorithms are compared this is a necessity. Inadequate verification. Might not be relevant for theoretical theses.	Analysis of the results with graphics like bargraphs and boxplots has been made. Statistical methods have been employed to compare different results. AUCs have been obtained. Minimal verification.	Criteria 6 + Attention has been paid to the distribution of the data. Verification has been carried out. Attention is paid to overfitting.	Criteria 7 + Results have been analysed with proper statistics. Model assumptions of statistical methods are verified or methods that do not make assumptions were employed for non-Gaussian data. Checks were made to avoid hidden overfitting.	Criteria 8 + Best approach for obtaining significant results was taken while refraining from p-value hacking.
Interpretation of findings (e.g. in terms of a) research ethics b) limitation of the research methodology)	AI14, AI7, AI11, AI16 DS15, DS8, DS12, DS17		No or unclear/questionable/vague interpretation of findings and research limitations. Student fails to demonstrate that he/she knows what the outcome is about.	Only most obvious findings and research limitations are discussed. Conclusions have tenuous connection with the results.	Adequate but limited discussion and/or reflection on findings and research limitations. Conclusions have a connection with the results	Complete and well-balanced discussion and/or reflection on findings and research limitations vis-a-vis existing research. Conclusions have been based on results, but have not been taken to a higher level.	Excellent and critical discussion and or reflection on all findings vis-a-vis existing research. Attention for research limitations and concrete suggestions for further research. Conclusions have been based on results, and have been taken to a higher level.
Arguing on societal implications and recommendations (if applicable)	AI8, AI9, AI13 DS9, DS10, DS14		Managerial/societal recommendations are absent and/or trivial.	Some managerial/societal recommendations are given, but are not derived clearly from the findings.	Managerial/societal recommendations are well-linked to findings.	Managerial/societal recommendations are to-the-point, and well-linked to findings.	Managerial/societal recommendations are well-derived from findings, original and actionable.

Remarks on thesis content

Product

Evaluation Criterion	Qualification	Grade	Fail	6	7	8	9 to 10
Product							
Product quality (if applicable)	AI6 DS6, DS7		The product / code is flawed. The code contains bugs and is poorly written. Code is not or not well documented.	Product / code runs as expected. The documentation of the code is lacking and the code itself is not written in an optimal way.	Product / code runs well without flaws. It is well written and is commented in such a way that an external party can easily extend it.	Criteria 7 + the code contains features that makes it valuable for publishing it in an open source repository / apply in business use. Some attempt to	Criteria 8 + the code is highly optimized.

						optimize has been done.	
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Remarks on product

Process

Evaluation Criterion	Qualification	Grade	Fail	6	7	8	9 to 10
Process							
Professional attitude	AI3 AI4, AI11, AI12 DS3, DS4, DS12, DS13		Does not show initiative, does not keep promises, fails to keep supervisor informed, ignores feedback.	Shows limited initiative, sticks to agreements, informs supervisor adequately, open to feedback.	Shows initiative, sticks to agreements, regular supervisor updates, seeks feedback constructively.	Highly engaged, makes and sticks to agreements, seeks feedback regularly.	Excellent project management and communication skills.
Ability to work independently and growth curve	AI5 DS5		High dependence on supervisor, not able to solve problems independently in research or writing, shows no or limited growth.	Mainly dependent on supervisor, tries to solve problems independently in research or writing, shows limited growth.	Plans and performs research and writing tasks mostly independently, shows visible growth.	Plans and performs research and writing tasks independently, shows substantial growth.	Highly independent, shows impressive growth, eager to learn new knowledge and skills.

Remarks on process

Thesis presentation

Evaluation Criterion	Qualification	Grade	Fail	6	7	8	9 to 10
Thesis presentation							
Presentation	AI15 DS16		Poor presentation layout, main conclusions are not clear, attention of audience not captured.	Acceptable presentation layout, main conclusions are clear.	Clear presentation layout, main and subconclusions are clear.	Attractive presentation layout, main and subconclusions are clear and convincing.	Lively presentation, arguments and (sub)conclusions are skillfully presented, clear and attractive lay-out. Shows well developed critical thinking and depth of subject knowledge, arguments are skillfully presented.
Defence	AI15 DS16		Not able to answer simple questions, inadequate or irrelevant answers/response.	Addresses questions but shows some weaknesses, adequate answers/response.	Nearly all questions are answered appropriately, convincing answers/response.	Nearly all questions are answered appropriately, reveals depth of knowledge.	To-the-point answers to all questions, masters contents of thesis and beyond that.

Remarks on thesis presentation

Assessment

Guidelines

The assessment should be reflected in the score of the rubrics and any strong weighing or achievements not covered by the rubrics must be discussed in the further motivation. Furthermore, part of the assessment criteria is based on publishability of the results. Hence, the student should proactively discuss

the platform for which a paper will be written, to match the student's ambitions. The supervisor(s) must be co-author of the paper and consent that it is of sufficient quality to be published there before this is done.

If a grade ≥ 8.5 is awarded the student becomes eligible for thesis awards. There might be many students with such grades, hence examiners are asked to only nominate the top students for such awards. Each examiner should not nominate more than 1 or 2 students per year.

Both half and whole grades can be awarded. Any grade smaller than 6.0 is a failing grade.

Assessment

Final grade for the thesis:

Plagiarism

☐ The examiners performed a mandatory plagiarism check through e.g. safeassign on EleUM and no evidence of plagiarism was found

Further motivation (if needed)

Nomination

☐ The examiners nominate this thesis for a thesis award
If checked, motivation:

Signing

Date:

Place:

Examiner 1

Name:

Signature:

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Examiner 2

Name:

Signature:

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Thesis committee member 1

Name:

Institute:

Position:

Signature:

.....

Thesis committee member 2

Name:

Institute:

Position:

Signature:

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Thesis committee member 3

Name:

Institute:

Position:

Signature:

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Input external supervisor

If this concerns a thesis in the form of an internship, the advice of the external supervisor is taken into account

- ☐ The assessment form was filled out together with external supervisor
- ☐ The external supervisor has other input regarding grading:

If one of the checkboxes above is checked:

External supervisor

Name:

Institute:

Position:

Signature:

.....

or

- ☐ The external supervisor has added input to the grading via email or a letter as attached