University of Ljubljana

Faculty of Electrical Engineering

Name and surname of the candidate, current degree of professional education

DOCTORAL DISSERTATION PROPOSAL

**Proposed title in Slovene**

**Proposed title in English**

*Note:* *The proposed title of the dissertation should reflect the content of the work in a short and concise way. The use of colons, semicolons, dashes as well as introduction of subordinate clauses shall be avoided. Terms like analysis, study or similar shall be excluded from the title if possible (analysis and study are carried out in any doctoral dissertation). Abbreviations should be avoided unless they are widely used, also outside the field of research. English and Slovene title should be consistent and matched. Pay attention on grammatical correctness.*

Research field: Electrical Engineering

Ljubljana, 20xx

*Remarks:*

*Number of pages of the doctoral dissertation proposal should be in the range of* ***3-7 pages (recommended 5-6 pages)****, excluding the cover page, the list of references and Appendix 1.*

***In the final version of the doctoral dissertation proposal the candidate should consider possible recommendations and amendments given by the members of the Doctoral Studies Committee at the presentation of the proposal.*** *The Committee should consider the final version of the proposal in their assessment. The final version should be also submitted to the Student affairs office of the faculty.*

Note: Instructions (text in grey colour) shall be deleted in submitted version of the document.

1. **Description of the specific research field and introduction to the research problem**

(about half a page)

* Specify and briefly describe the specific research field in which original contributions of the dissertation are expected. Highlight the importance and topicality of the research field.
* Briefly explain motivation of the work. In a few sentences highlight the essence of the research problem (a more detailed elaboration of the research problem should be given in section 3).

1. **State of the art in the field and the overview of relevant literature**

(about one page)

* Briefly present the state of the art in the specific research field of the proposed topic. Make an overview and brief analysis of the most relevant literature, including also the latest publications from the specific research field.
* Link the starting points of your research to the presented state of the art. Briefly highlight the challenges and explain the purpose of your research.
* Based on the brief literature analysis justify the relevance and topicality of the proposed research.

1. **Description of the problem and definition of hypotheses or research questions or objectives**

(about two pages)

* Present the research problem in a concise way.
* Then clearly define either research hypotheses (H) and/or research questions (Q) and/or detailed objectives (O) of your work. Usually, one of the three options is selected. From the point of view of general science, definition of hypotheses among the given options may be considered as a common way, however, ithe selection depends on the problem and specific field of research. Give a clear indication which option was selected and use a proper enumeration of hypothesis (H1, H2, ...) or research questions (Q1,Q2, ...) or detailed objectives (O1, O2, ...). Typically, about three main hypotheses or research questions or detailed objectives are specified, however, it depends on the content of the research.

1. **Research concept and methods**

(about one page)

* Describe research concept and basic methodological approaches to be carried out.
* Provide more detailed description of the research methods you intend to use (tools, approaches, procedures, e.g. theoretical, experimental, simulation) and, if applicable, expected timeline of specific research phases.

1. **Expected results and original contributions to science**

(about one page)

* Specify what the expected results of the research are. The expected results do not necessarily include only the expected original contributions to science.
* Then clearly highlight the expected original contributions to science (preferably as a bullet list with up to maximum five contributions).
* Give a brief explanation of the expected original contributions. As the contributions are based on predictions, it is advisable to formulate them in a proper “not too narrow and not too wide” manner. As original contributions one can consider, for example, original methods, novel approaches, new findings. The original contributions are not e.g. implementations of known methods, solving practical problems with known methods or similar.

1. **A draft of the research data management plan**

The draft plan is set out in the attached form (Appendix 1).

Recommendation: under this point, complete the attached form (table). Under point 6, retain only the sentence above.

**References**

[1] Up to 30 relevant publications, all of them should be cited in the text of the proposal.

Appendix 1: Draft Research Data Management Plan

* The draft Research Data Management Plan (DMP) is a compulsory annex to the doctoral proposal for all students enrolled in the PhD programme from and including the academic year 2021/2022.
* The following form (table) of DMP is available for the draft plan. The completed form (table) should be placed in the same file as the main body of the doctoral proposal (this document).
* The form can be completed in a concise manner (it can also be in the form of bullet points or clear answers to the questions asked).
* For a broader explanation of the purpose of the form, please refer to the document 'Introduction to the DMP' which you have received in addition to this document.
* The basic guidelines for the content of the plan are also briefly mentioned in Article 50 of the UL Doctoral programme regulations\* (see below). Further information on the plan can be found in this [video](https://youtu.be/XexEO716GJE) and in other documents on the UL Doctoral School website at this [link](https://www.uni-lj.si/studij/doktorska_sola/raziskovalni_podatki/).

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\*Article 50

Research data generated and collected for the needs of a doctoral dissertation must be published or otherwise accessible in such a way that allows their visibility, access, interoperability and the possibility of renewed evaluation and use. The doctoral candidate shall submit research data to a data repository, data centre or research data archive, which shall satisfy the principle of verifiability, transparency and open science. As a priority the research data shall be sent to the sectoral national or international data centres intended for specific types of data, or to the UL Repository.

The doctoral dissertation shall state where the data are accessible and how they can be accessed. Exceptions in the sharing of data shall be justified where they involve personal or sensitive data,

or where there are reasons for protecting intellectual property or for non-disclosure of vulnerable areas, groups or species. In the case of implementing justified exceptions to data sharing, the doctoral candidate shall ensure an appropriate method of protecting the data and limiting access to such data in agreement with the data centre. In this case at least freely available metadata must be generated for the catalogue of the data centre, so as to indicate clearly where and under what conditions the research data are accessible.

Appendix 1:

**Draft of the Data management plan (DMP-1)**

|  |
| --- |
| Name of the doctoral student:  Doctoral programme and scientific field:  Proposed title of the doctoral dissertation: |
| **Type of data and methods used for data collection or production**   1. What data will be collected or produced? 2. How will new data be collected or produced and/or how will existing data be re-used for the purposes of your doctoral thesis? 3. Will you be dealing with sensitive data? If yes, how will you ensure compliance with ethical requirements when producing and/or creating data? |
| **How data will be stored and protected during research for a doctoral thesis**   1. How will data be stored? 2. If you will be dealing with sensitive data, how will you keep it safe and secure? (Move to the next question if not applicable) |
| **Long-term data availability and storage**   1. In which data repository will you store the data for the long term after the completion of the research work and make it accessible in accordance with the requirement of Article 50 of the Regulations on Doctoral Studies of the UL? 2. Do you plan to restrict access to the data for a certain period? If yes, please explain the reasons for this (e.g. for intellectual property or patent protection, or other reasons). |