

How to Prepare a Proposal

A research proposal serves as a blueprint for a research project and should be clear, concise, and well structured (typically 3–4 pages). It must clearly define the research question, objectives, and methodology, while demonstrating the feasibility of the project. In addition, the proposal helps to ensure a shared understanding between you and your supervisor and allows potential misunderstandings to be identified at an early stage.

Below are the key elements that your proposal must contain:

- **Meta-information:** Provide a working title for the project (which may be refined later), your personal information (name, email address, matriculation number), and the current month and year.
- **Embedding and Motivation:** Briefly introduce the topic and explain its relevance. Motivate why the problem is important and worth investigating.
- **Related Work:** Provide a concise overview of relevant scientific literature and position your project with respect to existing work. Highlight similarities, differences, and gaps that your project aims to address.
- **Problem Statement and Objectives:** Clearly define the research problem and any open questions. State the main objectives of the project (typically 2–3, with the option to include one or two additional objectives). Objectives should be specific, measurable, and achievable. If applicable, describe expected results and formulate hypotheses or predictions.
- **Approach and Methods:** Describe the theoretical and/or practical approach you will take to achieve the objectives. If already known, specify the intended programming languages, frameworks, libraries, or software tools. If applicable, describe datasets, simulations, or experiments.
- **Evaluation Strategy:** Define how the success of the project will be evaluated. Specify evaluation metrics, baselines or reference methods, and criteria for assessing results (e.g. classification accuracy, runtime analysis).
- **Project Plan and Timeline:** Provide a *Gantt chart* or timeline with key milestones. Structure the project into phases such as literature review, design, implementation, testing, evaluation, and writing.
- **Risks and Limitations:** Identify potential risks, limitations, or dependencies (e.g. data availability, computational resources) and briefly outline mitigation strategies where appropriate.
- **References:** Cite all relevant sources using an appropriate academic format.