Theory Project Proposal

Length: approx. 3 pages per student

Project Title:

Student Name:

Student ID:

Supervisor Name:

Project Category/Topic:

- Theory

Project Aim:

- In no more than three sentences, describe what you wish to achieve.
- Significance: Why is the project important?
- Relevance: Your project needs to have a computer science theory content, what is it?

Related work:

- List the most relevant work in the area (with the help of the supervisor).

Project Objectives/Deliverables:

- 5-10 concrete and measurable project objectives.
- Your project could be purely dissertation based. In that case, in your objectives you need to describe the mathematical theories and papers you will study.
  Alternatively, it could be based mostly on theory as before and in addition there could be a proof-of-concept implementation.
  Finally, the aim could be to build a usable software system which nevertheless takes into account theoretical advances.
- For each objective, a one-line description of how you measure successful delivery.

Methodology:

- Description of approach to solve the problem.

Project plan:

- Feasibility: Explain why your skills/expertise and the available resources are sufficient to complete the project in time.
- Gantt chart with tasks and milestones, reflecting the project objectives/deliverables.
- Explanation of Gantt chart

Risks and contingency plan:

- What might happen that would prevent you from reaching the project objectives?
- What are the particularly difficult aspects of the project which you are worried about completing?
- What is your contingency plan if there are problems?

Hardware/Software Resources

- What HW/SW resources will be required to complete the project?
- Does the student/supervisor have access to these resources?

Data

- What datasets (if any) are required to complete the project?
- Does the student/supervisor have access to this data?

References

Security Project Proposal

Length: approx. 3 pages per student

Project title:

Student name:

Student ID:

Supervisor name:

Project Category/Topic:

- Security

Project aim:

- In no more than three sentences, describe what you plan to achieve. This should be understandable to a computer scientist without specific cyber security knowledge.
- Significance and relevance: Why is the project important and why is it related to cyber security?

Related work:

- List the most relevant work in the area (with the help of the supervisor).

Project objectives:

- 4-6 *concrete* and *measurable* project objectives.
- Explain why the objectives are sufficient and necessary to achieve your project aim.
- For each objective, give a short description (1-2 lines) of how you measure successful delivery.
- What are the final deliverable(s) of your project?

Threat Model:

- Security projects usually operate in the context of a defined attacker or threat landscape. Briefly describe the threat model that applies to your project.

Methodology:

- Describe your approach to solve the problem and fulfil the project aims.

Project plan:

- Feasibility: Explain why your skills/expertise and the available resources are

sufficient to complete the project in time.
- Gantt chart with tasks and milestones, reflecting the project objectives and deliverables.

Risks and contingency plan:

- What might happen that would prevent you from reaching the project objectives?
- What are the particularly difficult aspects of the project which you are worried about completing?
- What is your contingency plan if there are problems?

Hardware/software Resources

- What HW/SW resources will be required to complete the project?
- Do you/does the supervisor have access to these resources?

Data (if applicable)

- What datasets (if any) are required to complete the project?
- Do you/does the supervisor have access to this data?

References

Software Engineering Project Proposal

Length: approx. 3 pages per student

Project Title:

Student Name:

Student ID:

Supervisor Name:

Project Category/Topic:

- Software Engineering

Project Aim:

- In no more than three sentences, describe what you wish to achieve.
- Significance and relevance: Why is the project important and how is it relevant to your chosen software engineering pathways? See the below paths.

Related work:

- List the most relevant work in the area (with the help of the supervisor).

Project Objectives/Deliverables:

- 4-6 concrete and measurable project objectives: you may wish to split the focus on the research and/or implementation contributions of your work. For guidance, you may follow one of the below pathways:
- **Pathway 1 - Software Development:** If your work is purely engineering/development, this may include the major features of your system. You may wish to highlight the most signficant requirements, the preliminary architecture and design that you envision, along the approach that you will be taking to implement and evaluate your software product. It is expected that your final thesis will provide systematic reporting that will further elaborate on the software engineering of your product, covering requirements, design and architecture, implementation, testing and evaluation.

  Pathway 2- Research-Based Software Systems Engineering: If your work is research-based, you need to include the major research work that will be carried out to meet your project aims (e.g. developing a new model; conducting an empirical/experimental investigation; research and implementation of a technique etc); coverage of the related literature and how it can support your research; sensible plan to evaluate your contribution.

Pathway 3- Research into Software Tools and Implementation Prototype: If your work will be a mix of research and implementation prototype (i.e. as proof of concept), you may need to include the most significant element of your research and features of your planned prototype and how it intends to serve your research.

- For each objective, a one-line description of how you measure successful delivery; this should tell us about your likely approach that you will take to evaluate your research and/or software product.

- Explain why these objectives are sufficient to achieve your project aim.

Methodology:

- Description of approach to solve the problem.

Project plan:

- Feasibility: Explain why your skills/expertise and the available resources are sufficient to complete the project in time.
- Gantt chart with tasks and milestones, reflecting the project objectives/deliverables.
- Explanation of Gantt chart

Risks and contingency plan:

- What might happen that would prevent you from reaching the project objectives?
- What are the particularly difficult aspects of the project which you are worried about completing?
- What is your contingency plan if there are problems?

Hardware/Software Resources

- What HW/SW resources will be required to complete the project?
- Does the student/supervisor have access to these resources?

Data

- What datasets (if any) are required to complete the project?
- Does the student/supervisor have access to this data?

References

MSc HCI Project Proposal

Length: approx 3 pages per student

Project Title:

Student Name:

Student ID:

Supervisor Name:

Project Category/Topic:

- HCI

Project Aim:

- In no more than three sentences, describe what you wish to achieve.
- Significance: Why is the project important?
- Relevance: Your project needs to have an HCI content, what is it?

Related work:

- List the most relevant work in the area (with the help of the supervisor).

Project Objectives/Deliverables:

- 5-10 concrete and measurable project objectives.
- For each objective, a one-line description of how you measure successful delivery.
- Explain why these objectives are sufficient to achieve your project aim.

Methodologies:

- Description of approaches to solve the problem
- For each, give details of approach, what you expect it to contribute to the project, and how it feeds into the next

Project plan:

- Feasibility: Explain why your skills/expertise and the available resources are sufficient to complete the project in time.
- Resources: do you need specialised software, hardware or services other than those normally available in the school?

- Gantt chart (ideally, on a weekly basis) with tasks and milestones, reflecting the project objectives/deliverables.
- Explanation of Gantt chart

Risks and contingency plan:

- What might happen that would prevent you from reaching the project objectives?
- What are the particularly difficult aspects of the project which you are worried about completing?
- What is your contingency plan if there are problems?

Hardware/Software Resources

- What HW/SW resources will be required to complete the project?
- Does the student/supervisor have access to these resources?

Data

- What datasets (if any) are required to complete the project?
- Does the student/supervisor have access to this data?

References

AI & Robotics Project Proposal

Length: approx. 3 pages per student

Project Title:

Student Name:

Student ID:

Supervisor Name:

Project Category/Topic:

- AI or Robotics Projects

Project Aim:

- In no more than three sentences, describe what you wish to achieve.
- Significance: Why is the project important?
- Relevance: You project needs to have AI/Robotics content, what is it?

Related work:

- Briefly describe the most relevant work in the area (with the help of the supervisor).

Project Objectives/Deliverables:

- 2-5 concrete and measurable project objectives.
- For each objective, a one-line description of how you measure successful delivery.
- Explain why these objectives are sufficient to achieve your project aim.

Methodology:

- Description of approach to solve the problem.

Project plan:

- Feasibility: Explain why your skills/expertise and the available resources are sufficient to complete the project in time.
- Resources:
    - Do you need school GPU resources?
    - Do you need access to particular robots and sensors, or specialised software, other than those normally available in the school?
- Gantt chart with tasks and milestones, reflecting the project objectives/deliverables.
- Explanation of Gantt chart

Risks and contingency plan:

- What might happen that would prevent you from reaching the project objectives?
- What are the particularly difficult aspects of the project which you are worried about completing?
- What is your contingency plan if there are problems?

Hardware/Software Resources

- What HW/SW resources will be required to complete the project?
- Does the student/supervisor have access to these resources?
- Note.
    - Among school GPU resources, if you need to use Jupyter notebooks (Accessed through a web browser, these environments provide an Nvidia T4 GPU, 4 cores and 16 GB RAM, and students will be allocated a fixed number of hours to use whenever they need)
        - Students should discuss this with their supervisor as part of preparing their proposal.
        - Supervisors can then make a request on behalf of their students by the 24th of June
        - Requests should include how many hours will be required, ideally with a minimum and maximum. These requests should be sensible - impractical requests will simply be denied. We would typically suggest that 40-100 hours would be sufficient.

Data

- What datasets (if any) are required to complete the project?
- Does the student/supervisor have access to this data?

References

Computational Life Sciences Project Proposal

Length: approx 3 pages per student

Project Title:

Student Name:

Student ID:

Supervisor Name:

Project Category/Topic:

- Computational Life Sciences

Project Aim:

- In no more than three sentences, describe what you wish to achieve.
- Significance: Why is the project important?
- Relevance: You project needs to have a computational life science content, what is it?

Related work:

- Briefly describe the most relevant work in the area (with the help of the supervisor).

Project Objectives/Deliverables:

- 2-5 concrete and measurable project objectives.
- For each objective, a one-line description of how you measure successful delivery.
- Explain why these objectives are sufficient to achieve your project aim.

Methodology:

- Description of approach to solve the problem.

Project plan:

- Feasibility: Explain why your skills/expertise and the available resources are sufficient to complete the project in time.
- Resources: Do you need school GPU resources?
- Gantt chart with tasks and milestones, reflecting the project objectives/deliverables.
- Explanation of Gantt chart

Risks and contingency plan:

- What might happen that would prevent you from reaching the project objectives?
- What are the particularly difficult aspects of the project which you are worried about completing?
- What is your contingency plan if there are problems?

Hardware/Software Resources

- What HW/SW resources will be required to complete the project?
- Does the student/supervisor have access to these resources?
- Note.
    - Among school GPU resources, if you need to use Jupyter notebooks (Accessed through a web browser, these environments provide an Nvidia T4 GPU, 4 cores and 16 GB RAM, and students will be allocated a fixed number of hours to use whenever they need)
        - Students should discuss this with their supervisor as part of preparing their proposal.
        - Supervisors can then make a request on behalf of their students by the 24th of June
        - Requests should include how many hours will be required, ideally with a minimum and maximum. These requests should be sensible - impractical requests will simply be denied. We would typically suggest that 40-100 hours would be sufficient.

Data

- What datasets (if any) are required to complete the project?
- Does the student/supervisor have access to this data?

References