

# Final Year Project Supervision

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*Version: Draft 0.2, Date: 2024-06-27*

## Objective

The Final Year Project aims to demonstrate a **student's ability to work independently on a problem within their field of study**, using scientific methods, all within a defined timeframe.

## Find a Topic

As the AI Research Center, we offer opportunities for Final Year Projects. The topic is related to the research domains of the AI Research Center. Therefore, candidates do not come up with a topic by their own, but **we develop your topic together**, based on your preferences and skills. Therefore, do not spend too much effort in developing something in advance, but first try to talk to us.

**Only go for a topic that really motivates you!** You'll spend a lot of time of your life on it. As a Research Center we only want to work on issues that are of real relevance to the community. This sometimes requires to not always go for the most elegant solution or the fanciest technology – but for pragmatic solutions. It almost always won't allow you to develop a solution in a locked office, but to **reach out the communities we serve**. We react to the feedback and wishes from our "customers," even if we do not always fully agree from our perspective.

You should be fine with this 😊 .

## Commit to the Requirements

### Meetings

**We expect a weekly meeting.** These meetings are meant to track the progress, discuss open questions and make sure that the goals of the Final Year Project remain aligned with those of the Research Center in potentially changing circumstances. It may also be used to introduce you to technologies or work together on crucial problems.

### Questions

You are very welcome to ask questions. **Never hesitate to ask questions!** That's what we are there for, to guide you with experience and knowledge – but: When you ask a question, make sure you present me at least two possible answers. Not, because I don't want to answer the question. I may tell you which is the better one or even give you a third one. However, **I want you to think carefully on each question** – and you will find that you can solve more issues on your own than you may have expected – and we can focus on the really hard ones in our meetings.

### Effort

For term 3-1, I expect you to spend at least 10 hours per week on the project. This said, I expect to see a progress in the project at each meeting that corresponds to 10 hours of work (per person). For 3-2, I expect you to spend at least 20 hours per week on the project.

## Protocols

We write a short protocol after each meeting. Not much, only two sentences, but this will help to keep track on what we do. You can also use it to remind me of what I promised to provide you, but not have delivered yet 😊.

## Exposé

In term 3-1, I request you to write an Exposé – this may be quite similar to the proposal you need to hand in at the Department, but I may add some requirements.

The Exposé derives and defines your research question based on related literature. It demonstrates a research gap and the need of research on this specific topic. It also establishes a common understanding of your research topic and the scope of your thesis.

An Exposé is of maximum 5 pages length (including appendix and literature) and is structured as follows:

1. Introduction: problem statement, motivation
2. Literature review and theoretical background: theory, research questions, objectives, significance of study, state-of-the-art, definitions
3. Research design: methods, experimental design, population, sampling, data collection, data analysis techniques
4. Appendix: Timetable, thesis organisation, provisional table of contents
5. Literature

## Deliverables

Besides your developed artefact, the Exposé, the paper and the final presentation we will, time-by-time define other deliverables that are of value for its own, e.g., open data sets, guidelines, ...

## Publication

We aim for publication of your results in an appropriate outlet. Please remain with standards of scientific rigor and document whatever you do. This will be important, when you will write down your work at the end.

## Affiliation to the AI Research Center

During your Final Year Project, you will be officially affiliated to the AI Research Center. You may be invited to certain events or meetings. You will act as a representative of the AI Research Center, so we demand loyalty to some extent. You are free to contribute to the AI Research Center even in other roles.

## Good Scientific Practice

All candidates at the AI Research Center agree to fulfil all requirements of good scientific practice.

- You do not copy from other research papers. You are allowed to present their ideas and findings with proper citation.
- You do not copy from other students' papers
- You are allowed to use tutorials, frameworks, even code on GitHub but you need to give credit and state accordingly in your thesis
- You are not allowed to have other people doing your work
- You are allowed to use ChatGPT (and similar tools), but for each use, state:
  - How you used it
  - Which prompt you used
  - What modifications you have done

Trust me, I'll read your work and I will find out.

## Examination Regulations

The candidates take care of the specific examination regulations in their respective faculties and departments. If action from our side is required, please let us know on time and we will do accordingly.

## Get set up

### GitHub

Please send us your GitHub username, create an account, if necessary, for we use Github to track your project.

### Mendeley

Please use Mendeley as a Reference Manager, so we can use a shared library of papers.

### Google Drive

Please send us your Gmail address, as we use Google Drive to share files.

### Whatsapp & Mail

Please provide us with your mobile number (which is on Whatsapp) and your E-Mail address for communication.

You will receive our details as well. However, be reminded that these details are for you and not meant to be spread without our permission.

## Further Recommendations

### Sources to get started with research & paper writing

All scientific work has to be conducted according to validated scientific methods to ensure validity and reliability of the results. Recker (2013) summarizes all valid research methods in the field of Information Systems. Above this, your advisor may suggest you a certain method.

We also suggest candidates to read the guide on scientific writing from Cochrane (2005).

Cochrane, J. H. (2005). **Writing Tips for Ph. D. Students**. Chicago. Retrieved from <https://faculty.chicagobooth.edu/john.cochrane/research/papers/phd paper writing.pdf>

Recker, J. (2013). **Scientific Research in Information Systems - A Beginner's Guide** (1st ed.). Springer-Verlag Berlin Heidelberg. doi: 10.1007/978-3-642-30048-6

## Stay up-to date

Developments in the field of AI are coming rapidly right now. It is not important to understand anything. However, it is good to at least try to be aware of the most important trends. Therefore, try to keep yourself exposed by reading newsletters and/or following selected accounts on X.

### Newsletter

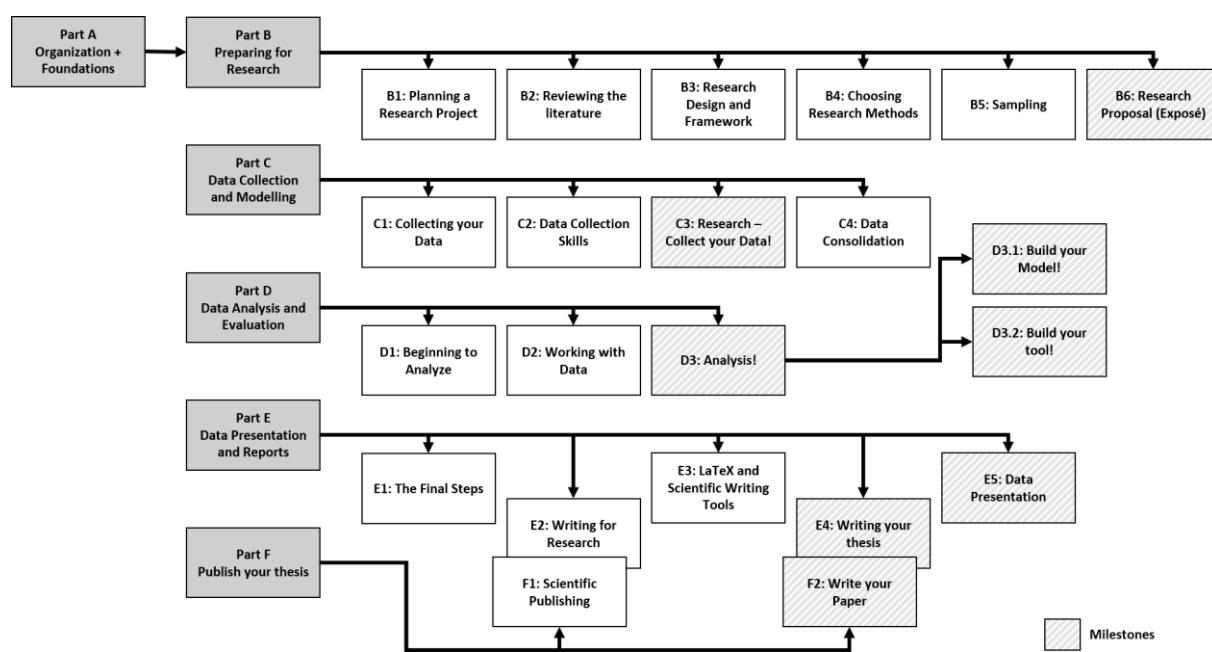
- Medium.com: <https://medium.com/>
- OpenTools: <https://newsletter.opentools.ai>
- AI Explained: <https://www.howtoai.pro/>
- The Batch: <https://www.deeplearning.ai/the-batch/>

- (TLDR AI Newsletter: <https://tldr.tech/ai>)
- (AIweekly by Essentials: <https://aiweekly.co/>)

### Twitter/X Accounts to follow

- Our Twitter and Whatsapp Account 😊
- Andrew Ng
- Yann LeCun
- Demis Hassabis
- Lex Fridman
- DAIR.AI
- ...

### The process of conducting your Final Year Project



### Free hosting of your solutions

- GitHub pages for static pages (Javascript etc. is possible)
- Pythonanywhere.com for Python-based Projects with less than 512MB disk space usage (Flask and Django are preinstalled) → Highly recommended
- Amazon AWS EC2 for more demanding project. One free instance with up to 32GB disk space and highly customizable
- Google App Engine to easily deploy web apps using standard frameworks (slightly more complex than pythonanywhere.com but with more power and scalable)
- Amazon Elasticbeanstalk (somehow similar to Goolge App Engine) – although I had problems when using Flask.
- Streamlit.io for demonstration purposes of ML algorithms (very powerful computing resources, but limited UI adaption capabilities)
- For Chatbots, try Google Dialogflow ES
- If none of above fits your needs, we may talk about renting a computing resource on my expenses.