

## **Project Guidelines**

The Goal of the project is to improve the research skills of students who are interested in pursuing M.Sc. or Ph.D. degrees.

The project will be performed in singles.

### **Important Dates:**

1. Deciding if you want to take the exam or do the project – By 10/1/26 23:59.
2. Deciding on a project topic - By 12/1/25 23:59.
3. Performing a literature survey and choosing a paper – By 26/1/26 23:59.  
You need to summarize the paper in 2-3 paragraphs and get my approval.
4. First checkpoint – In the first week of March 2026. Checkpoint by zoom or mail.
5. Submitting your finished work – In the first week of May 2026.

### **Possible Project topics:**

1. Underwater Image Processing
2. Image Blending
3. Medical Image Processing
4. Image Colorization
5. Deraining, Defogging and Dehazing
6. Image Registration

### **Instructions:**

1. Choose a topic out of the above six topics. It is better to read a little about each topic before choosing. You may suggest a different topic if you are connected to it already.
2. Perform a literature survey on this topic and view relevant papers. Please consider only new papers (2022-Now). If there aren't any new papers on your topic, you may try older papers (but to a reasonable limit). Choose a paper that interest you on your topic, preferably with a working implementation. Partial implementation is fine also.
3. If there is no implementation, consult with me immediately. On certain papers, I may allow you to implement the paper yourself. This is likely to give you a bonus.
4. You may select more than one paper if you wish. The two papers must be related somehow or you need to connect them in your work. This is likely to give you a bonus.
5. Get my approval for the paper you have selected.

### **Assignments:**

1. Read your paper and understand it thoroughly. If necessary, read some additional material from the cited papers or other resources.
2. Examine the importance of your paper to the topic and the level of influence your paper had on the evolvment of your topic. Report your findings.
3. Write a critical review on the paper. Consider attributes such limitations, readability, level of detail, ease of understanding and more. Report your findings.

4. Make the implementation work. Complete any missing implementation that is required for your work. Compare the results of the paper to the ones you were able to reach using the code. Report your findings.
5. Conduct more experiments, especially on new data. Try to conduct experiments you believe that are needed and missing from the original paper. Report your findings.
6. Research part – try one or more of the following: Use the work for some different relevant tasks that are not mentioned in the paper; Explore a new direction of using the work; Improve some critical disadvantage in the work or add a highly contributing property or feature; Improve the results of the meaningfully. Get my approval for your suggestion(s), implement them and test them. Report your findings.
7. Write a detailed report on your work. The report should explain the problem presented in the paper, the suggested solutions, analysis of your work, advantages, disadvantages, and answers to assignments 2-6 above. It is preferable to write the report in English, however Hebrew will also be accepted.  
Using an LLM for writing the report will result in an automatic **zero** on your work.
8. Prepare a 15-minute presentation on your work. The presentation must include key elements from the work and from the report. You will present your work after submission to the Lecturer and the TA. Tips on how to write a good presentation will be published later on the website (or just ask me). There will be timeslots for presentations, so the presentation might occur some time after you finish the project. Please take this under consideration. Timeslots will be in FCFS (Dibs) method.

#### Grading:

1. Main work (assignments 1-5): 45%
2. Experimental part (assignment 6): 30%
3. Report (assignment 7): 10%
4. Presentation (assignment 8): 15%

#### Submission:

1. Please submit the report, the presentation and all your code. Do not submit data, unless it was created by you.
2. Provide a Readme text file containing your name, ID and mail.
3. Provide a detailed instructions text file that will explain how to get the data you used and how to run your code, including a list of all needed dependencies.
4. It is advisable to create a simple demo file that runs a demo of your work.
5. Use a single ZIP file with your ID as its name. The code should be under a folder named src.

#### Support:

You can always contact me via email for questions and consultations or clearer guidelines. For resources use LAMBDA or NEWTON. Registration for LAMBDA through me is needed. If you are having problems, **CONTACT ME**. I have additional resources to give.

**Good luck!**