Project planning and group management

This is an extra add-on document within the repository of our project. This document will give a clear image the structure with which we have worked. This document will cover different aspects within the organization, covering a timeline of project process, work structure, collaboration, and a logbook with all relevant updates within our process. This document aims you as our supervisors to gain insights about our progress, role distinguishment and overall work attitude.

Timeline

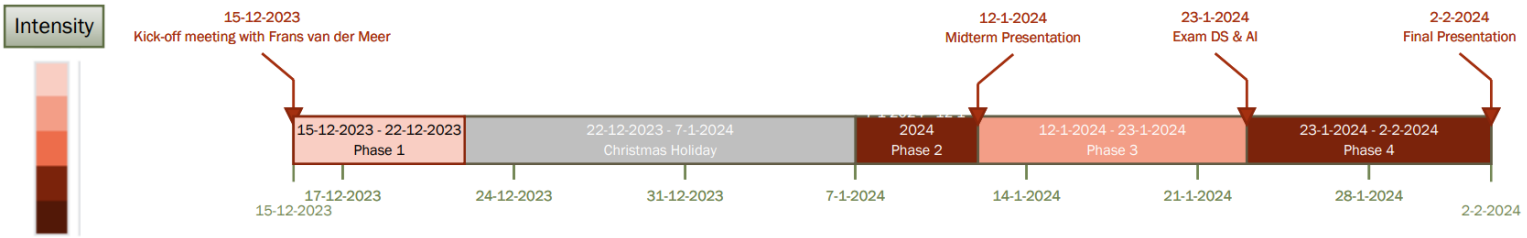

Figure 1: Timeline of the project, divided into different project phases.

As can be seen in the timeline, we have chosen to work in different project phases. In every phase, we have redistributed the different roles under the group members.

Phase 1

Description: Initiating project.

Objectives:

1. Everyone read relevant literature
2. Create framework that can input A and y data and give natural frequencies as output
3. Create github environment and repository, including main and branches

Role division

- **Everyone:** Read literature
- **Paolo:** Create github environment and get everyone on board, create initial loss function.
- **Nils, Niels & Lourens:** Initialize framework set up. Write functions that can convert array of data into a geom file that can be read by pyjive.
- **Javier:** Start working on other framework variation using classes

Phase 2

Description: Implementing first of Bayesian optimization model.

Objectives:

1. Running pyjive in different batches with random sets of variables
2. Storing outcomes
3. Inserting truss system in a Bayesian optimization model.
4. proceed further with class system framework
5. Prepare presentation for midterm presentation

Role division

- **Nils: 1 & 2**
- **Niels, Paolo & Lourens: 3 & 5**
- **Javier: 4**

Phase 3

Description: Tweaking parameters, varying in batch sizes and running the model for more iterations. Less intensive phase due the upcoming exam.

Objectives:

1. Try to find a better outcome of the code by trying to tweak different parameters within the system.
2. Updating Loss function
3. Study for exam

Role division **No role division for this phase**

Phase 4

Description: Code optimization. More accurately predict new iteration points. Move away from random searching into smart searching. Also visualization of findings.

Objectives:

1. Code optimization: Making model more complex, smarter search of new samples
    - Re-implementing optimizer function
    - Check if acquisition function is working properly
    - Dedimensionalization of variables (to gain lower dimensional insights)
    - Implementation of pre-knowledge on engineering to reduce dimensions (as later resorts)
    - Implement gradients for constraints and rewarding gradient when approaching constraints.
2. Visualization: Create nice plots and find ways to visualize obtained results
3. Solidifying work draft plan and group management
4. Preparing for end presentation

Role division

- **Lourens: 1**
- **Javier: 2**
- **Nils: 3**
- **Paolo and Niels: 4**

- **Everyone: 1**