Challenges and Planned measures

- "Staff taking images for teledermatology need to be good equipped, trained, identifiable and competent" [*4.1.3 TQS*]. What are requirements for patients taking images?
    - [Find updated quality standards, interpolate the camera/photographic specifications and photography protocol]
- Technical and medical terms/vocabulary
    - [Get familiar with the vocabulary]
- "Scale and Measurement Using Digital Imaging Software" [*7 domain ISIC*]. How does that work? I understand the concept, but I would like to "see" it.
    - [Maybe not necessary]
- Evaluation (adapted) methods?
    - [I have a general idea, but I would like to have a better understanding.]

- Many methods or processes written in the papers need long time to understand. [Get just an overview on the methods and remark it. If needed I can come back in the future.]
- Literature review and synthesis of the gathered information. [Sort the papers read into different categories and come back later to it if needed]

- SOTA IQA methods are mainly focused on distortions and feature extractions. Teledermatology IQA focuses additionally on framing and depth because the orientation o the skin and if the skin is too far away matters. [incorporate skin segmentation preprocess to mitigate depth and for framing... I must find other literature.]

- For finetuning I needed MOS or DMOS scores, where Fitzpatrick did not have. [SCIN dataset has dermatology confidence score, ranging from 1 to 5. I used that as an alternative to MOS. A single image could have multiple conditions so it can also have multiple confidence scores.]
- Getting an even distribution of the confidence score was at first a little challenging. [Since I wanted a single score per image, I took the median of the scores and took the min or max of the scores depending on, if the score is <2 or >2. This was done deliberately so most of the scores were then evenly distributed at the extremes.]
- SCIN dataset has 10'379 images. After preprocessing I am left with 6'503 images. Could be small for finetuning. [Getting more images!]
- The first results were not very satisfying because the model makes mistakes! [look at the features that were extracted from the encoder model with a t-SNE plot or look at if the dermatology confidence score matches the image in SCIN.]

- Background and orientation distortions are difficult to synthetically reproduce.
  [I decided to use "colorblock" for background distortion where randomly blocks are placed in the image to add artifacts. The idea behind this is to distract the model from the skin lesion.]
  [For orientation distortion I decided to change the perspective of the image, so I get different angles from the image. It is like tilting the image.]
- Field of view distortion is challenging to synthetically reproduce for FR IQA.
  [I could crop (upper right corner) from the images and the crops should then have the skin lesion at the down left corner, but I am unsure if this is a valid idea.]

- I tried to work with overleaf to write my thesis but since I have no access to the pro version I encountered some issues with syncing. [I switched back to writing in VSCode.]
- The DDI dataset was not very helpful. When sifting through the images I was not content with the images because it was not representative of teledermatological images. [I will not include it in my thesis.]
- The MAE and MSE values are not good enough. [Try other models that can capture the complexity]

- The metrics such as precision and recall are around 40%. [Hyperparameter tune with grid search or sweeps in wandb. Cross validate the dataset.]