Review of Master's Thesis

Student: Bak Adam, Bc.
Title: Simulation of Skin Diseases Effect Using GAN (id 24097)
Reviewer: Goldmann Tomáš, Ing., DITS FIT BUT

1. Assignment complexity   average assignment
Because study materials and examples of GAN networks are avaliable and can be used to solve the thesis, I consider the assignment to be of moderate difficult.

2. Completeness of assignment requirements   assignment fulfilled
All the assignment requirements have been completed.

3. Length of technical report   in usual extent
The scope of the technical report is approximately 90 standard pages. All the text is relevant to the assignment.

4. Presentation level of technical report   72 p. (C)
The technical report is divided to the 9 chapters. It would be better if the technical report was divided into fewer chapters. The scope of the chapters is unblancing. For example, the chapter *Design of GAN for Generating Skin Diseased* has only 5 pages and the chapter *Results Evaluation* has 15 pages. In terms of content, it would be appropriate to describe the training of the neural network in detail and show the loss function of the discriminator. In addition, the section with information about trainining the neural network should be placed in the implementation chapter.

5. Formal aspects of technical report   82 p. (B)
The level of written language in the technical report is high. From a typographic point of view, the technical report is well written with a minimum of shortcomings.

6. Literature usage   80 p. (B)
The reference list consists of 60 bibliographic records, which are most often citations of papers and books. I have objections to the placement of references at the end of paragraphs. The style of referencing is inappropriate.

7. Implementation results   95 p. (A)
The generator is based on an existing approach that has been significantly modified for the work. With the solution, the three kind of skin disease can be generate. Due to the used dataset, which consists of non-uniform data, I consider the outputs from generator have sufficient quality. The main script, which is used to train the neural network and to generate the output, has enough comments.

8. Utilizability of results
In terms of usability, the results can be use for other work. I recommend writing a scientific paper from the results.

9. Questions for defence
- How many samples were used for neural network training?
- What other data augmentation methods could be used to extend the dataset?

10. Total assessment   91 p. excellent (A)
The diploma thesis is very well processed. Although I have encountered several shortcomings, I don't consider them significant due to the topic and scope of the work. Therfore, I propose the thesis be graded **A**.

In Brno 9 June 2021

Goldmann Tomáš, Ing.
reviewer