THESIS REVIEWER'S REPORT

I. IDENTIFICATION DATA

Thesis title:	**Mobile application forself-evaluation of skin lesions**
Author's name:	**Tereza Lemáková**
Type of thesis :	bachelor
Faculty/Institute:	Faculty of Electrical Engineering (FEE)
Department:	**Department of Computer Science**
Thesis reviewer:	Daniel Novak
Reviewer's department:	Department of Cyberbnetics

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment **challenging**

How demanding was the assigned project?

The project was demanding. It required the integration of complex technologies, including the use of convolutional neural networks (CNNs) for image analysis and evaluation, the development of both client and server applications, and the implementation of security measures to handle sensitive data. Additionally, the project involved user interface design, usability testing, and the need to manage a substantial dataset of images.

Fulfilment of assignment **fulfilled**

How well does the thesis fulfil the assigned task? Have the primary goals been achieved? Which assigned tasks have been incompletely covered, and which parts of the thesis are overextended? Justify your answer.

The thesis fulfils the assigned tasks. The primary goals, such as providing a detailed analysis of self-examination techniques, designing and implementing a native Android application, and integrating an AI-based image evaluation algorithm, have been achieved. The project also included user testing and adjustments based on feedback, demonstrating thoroughness. The tasks were neither incompletely covered nor overextended; instead, the scope was appropriate and well-balanced, addressing all essential aspects effectively.

Methodology **correct**

Comment on the correctness of the approach and/or the solution methods.

The methodology employed in the thesis for developing a mobile application for self-evaluation of skin lesions is well-structured. The student has combined several advanced techniques and frameworks to create a final solution. The project follows a clear, systematic approach, starting with a thorough analysis of existing methods and requirements for skin self-examination. The design phase includes architectural planning for both the client and server sides, ensuring scalability and security. The implementation leverages modern technologies like Android Jetpack Compose for the client application and Spring Boot for the server, integrating a convolutional neural network (CNN) for image analysis. The correctness of the approach is validated through testing, including usability testing and development testing. The methodology ensures that the solution is both technically sound, although further improvements in the user interface are needed to enhance daily usability. Overall, the approach is methodical, the solution methods are appropriate for the problem, and the implementation demonstrates sound level of technical competence.

Technical level **C - good.**

Is the thesis technically sound? How well did the student employ expertise in the field of his/her field of study? Does the student explain clearly what he/she has done?

The thesis is technically sound. The student employed some expertise in mobile application development, artificial intelligence, and security. The methodologies and implementations are clearly explained, including detailed descriptions of the technologies used, the architecture of the application, and the process of integrating the AI algorithm. The documentation includes comprehensive explanations of each step, making the technical aspects of the project transparent

and understandable. However, the current mobile application is only suitable for testing purposes. From a UX perspective, it is entirely unsuitable for daily user interaction. It lacks intuitiveness, and the graphical design is poor.

Formal and language level, scope of thesis **A - excellent.**

Are formalisms and notations used properly? Is the thesis organized in a logical way? Is the thesis sufficiently extensive? Is the thesis well-presented? Is the language clear and understandable? Is the English satisfactory?

Formalisms and notations are used correctly throughout the thesis. The document is organized logically, following a clear structure from introduction to conclusion, and covering all necessary aspects in a coherent manner. The thesis is sufficiently extensive, covering both technical and user-oriented elements comprehensively. It is well-presented, with clear and understandable language.

Selection of sources, citation correctness **A - excellent.**

Does the thesis make adequate reference to earlier work on the topic? Was the selection of sources adequate? Is the student's original work clearly distinguished from earlier work in the field? Do the bibliographic citations meet the standards?

The thesis makes adequate references to earlier work, providing a solid foundation for the research and development conducted. The selection of sources is relevant and adequate, covering both medical and technical literature appropriately. The student's original contributions are clearly distinguished from earlier work, with proper attribution given to referenced materials. The bibliographic citations meet academic standards and are consistently formatted.

Additional commentary and evaluation (optional)

Comment on the overall quality of the thesis, its novelty and its impact on the field, its strengths and weaknesses, the utility of the solution that is presented, the theoretical/formal level, the student's skillfulness, etc.

Please insert your comments here.

III. OVERALL EVALUATION, QUESTIONS FOR THE PRESENTATION AND DEFENSE OF THE THESIS, SUGGESTED GRADE

Overall, the thesis is of good quality. It presents a sound approach to self-evaluation of skin lesions using a mobile application combined with AI, which has significant potential impact in the field of e-health and preventative medicine. The strengths include a comprehensive analysis, reasonable technical implementation, and some integration of user feedback. The utility of the solution is clear, offering an accessible tool for early detection of skin conditions. One minor weakness could be the reliance on user-provided images, which may vary in quality, but this is mitigated by the implemented quality checks. Another minor weakness is poor UX interface. The student demonstrated a good level of skillfulness in both theoretical understanding and practical execution .

The grade that I award for the thesis is **B - very good.**

Date: **13.6.2024** Signature: