Tomas Bata University in Zlín
Faculty of Applied Informatics

OPPONENT´S EVALUATION OF THE MASTER´S THESIS

Student: **Aneke Chibuike Kennedy** **Opponent:** **Ing. Daniel Honc, Ph.D.**

Study program: **Engineering Informatics**
Study course/Specialization: **Information Technologies**
Academic year: **2023/2024**

Master's Thesis topic: **Mobile Application for Reading and Evaluation of Numbers**

Evaluation of the thesis:

The diploma thesis addresses the intriguing problem of character recognition for printed and handwritten numbers. The objective was to design and test a mobile application using a built-in camera.

The theoretical section of the thesis (23 pages) provides an overview of machine learning theory and compares mobile application development tools, specifically Flutter and .NET, as well as desktop and mobile applications. The practical section (10 pages) details the digit recognizer – a machine learning framework. Google's ML Kit was utilized with only a few lines of code, along with a Flutter mobile application for Android OS. This application allows images to be read from the mobile device's camera or gallery. The author conducted a recognition test of printed and handwritten numbers. However, the meaning of Chapter 5, titled 'Case Study', is unclear. It seems out of place in the practical section. The bibliography is extensive, with 52 items.

While the structure of the thesis is generally logical, the chapter numbering is nonsensical. The text often appears to be filler content, included merely to meet the thesis's required length. Some sentences are incomplete, leaving their intended meaning unclear.

The statement "The accuracy of recognition of these digits was less than 50%" seems illogical, especially considering the previous sentence "After the image above was ran through the application for recognition it failed to recognize most of the numbers, this is due to the variability of the fonts and its uniqueness.".

The graduate tackled the compelling issue of text recognition and mobile application development. However, since a framework Google's ML Kit was used, it's challenging to assess the graduate's unique contribution to the problem. While it's clear that the application required significant effort, it's uncertain what the graduate solved independently and what resources were directly used, e.g. code on GitHub. From this perspective, the work appears more akin to an bachelor thesis or a year-long project.

During the defence, the graduate should explain in detail the amount of work done and his/her contribution to the issue.

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Overall evaluation of the thesis:
The Opponent shall grant a mark according to the ECTS classification scale:
A – Excellent, B – Very Good, C – Good, D – Satisfactory, E – Sufficient, F – Insufficient
An “F” grade also means "I do not recommend the thesis for defence."

I recommend this thesis to be defended and suggest the following evaluation:

D - Satisfactory

In the case of an evaluation grade of “F – Insufficient”, please supply the main shortages and reasons for this assessment.

Date: 20. 5. 2024

Thesis Opponent's Signature: