I. IDENTIFICATION DATA

Thesis title:	Edge AI Integration for Anomaly Detection in Assembly using Delta Robot
Author's name:	Vojtěch Hanzlík
Type of thesis :	bachelor
Faculty/Institute:	Faculty of Electrical Engineering (FEE)
Department:	Computer Science
Thesis reviewer:	Michal Vavrecka
Reviewer's department:	CIIRC CTU

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment   easy

How demanding was the assigned project?

Vojtěch Hanzlík's thesis focuses on developing and deploying an anomaly detection system for a multi-axis delta robot used in the assembly of remote-controlled vehicle wheels. The system aims to achieve real-time data processing and integrate human feedback for continuous improvement. The project itself is just implementation of exisiting algorithms and test them on real robot. I do not consider this project as challenging.

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.

Student implemented all parts of the architecture.

Methodology   correct

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

While the thesis provides some performance metrics, a more extensive analysis of the system's performance under various conditions would strengthen the evaluation. This could include stress testing the system with higher data loads or comparing the anomaly detection accuracy against other models.

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 demonstrates understanding of system architecture by integrating various technologies such as OPC UA for real-time data communication, gRPC for efficient data transfer, and Flask for a user-friendly web interface. The decision to use Docker for containerization ensures the system's scalability and portability.

Formal and language level, scope of thesis   C - good.

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?

The English level is satisfactory. Some parts of text are not easy to follow due to poor formulation of ideas.

Selection of sources, citation correctness   B - very good.

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?
There is 24 reference. They follow the standards.

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

Summarize your opinion on the thesis and explain your final grading. Pose questions that should be answered during the presentation and defense of the student's work.

Vojtěch Hanzlík's thesis presents a practical approach to integrating edge AI for anomaly detection in industrial assembly processes. Despite some areas that could benefit from further exploration, the thesis makes a significant contribution to the field of Industry 4.0.

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

Date: 5.6.2024   Signature: