PROJECT REPORT

EARLY ANOMALY PREDICTION OF MACHINE DAMAGE USING C4.5 ALGORITHM BASED ON IOT

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2022

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I, the undersigned:

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declare that this work, titled " EARLY ANOMALY PREDICTION OF MACHINE DAMAGE USING C4.5 ALGORITHM BASED ON IOT ", and the work presented in it is my own. I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at Soegijapranata Catholic University
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated.
3. Where I have consulted the published work of others, this is always clearly attributed.
4. Where I have quoted from the work of others, the source is always given.
5. Except for such quotations, this work is entirely my own work.
6. I have acknowledged all main sources of help.
7. Where the work is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself.

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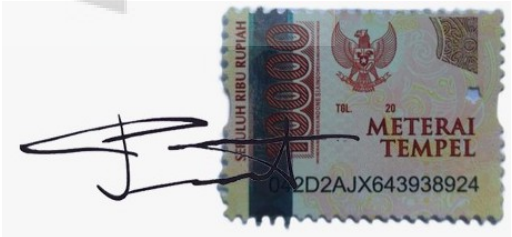

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ACKNOWLEDGMENT

I have received a myriad of support, advice, and assistance throughout this document writing. I would like to thank my supervisors Y.b. Dwi Setianto ST., M.Sc. for formulating this topic. I would also like to thank my friend for guiding with advice to finish this document.

I would like to thank my family and friends for giving me ceaseless love, support, and advices throughout my study in Soegijapranata Catholic University.

Semarang, January, 14, 2022

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ABSTRACT (ABSTRACT TITLE)

Machine condition is a problem that is difficult to predict, prediction of machine condition is an important aspect in the application of maintenance because the occurrence of damage can result in a decrease in the productivity of a company. Measurement of vibration, temperature, and machine displacement is a fairly good method to determine the condition of the machine because it is an indicator of mechanical conditions and an early indicator of damage to the machine as a whole, Application of Algorithms in processing vibration, temperature and machine displacement data to improve the prognosis of damage.

In this project, predictions of machine condition will be carried out using the C4.5 algorithm. Data taken using sensors at a certain time will be used to predict the decline in the performance of a machine. This data will be used for training and testing data.

This project was concluded that the C45 algorithm obtained accuracy with the difference between Training data and Test data, 60.8% for Training data and 76.4% for Testing data. Proving that the C45 algorithm is effective for predicting the initial anomaly of damage to the machine. It is necessary to re-calibrate the sensor limits, and replace the sensors used because this project uses sensors for prototypes.

Keyword: Machine condition, Vibration, Temperature, Machine Displacement, C4.5

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