



**WEB-BASED FOR CALCULATING AND TRACKING TOOL MACHINE
LIFESPAN IN THE PRODUCTION PROCESS AT PT MITSUBISHI ELECTRIC
AUTOMOTIVE INDONESIA**

UNDERGRADUATE THESIS
Submitted as one of the requirements to obtain
Sarjana Komputer

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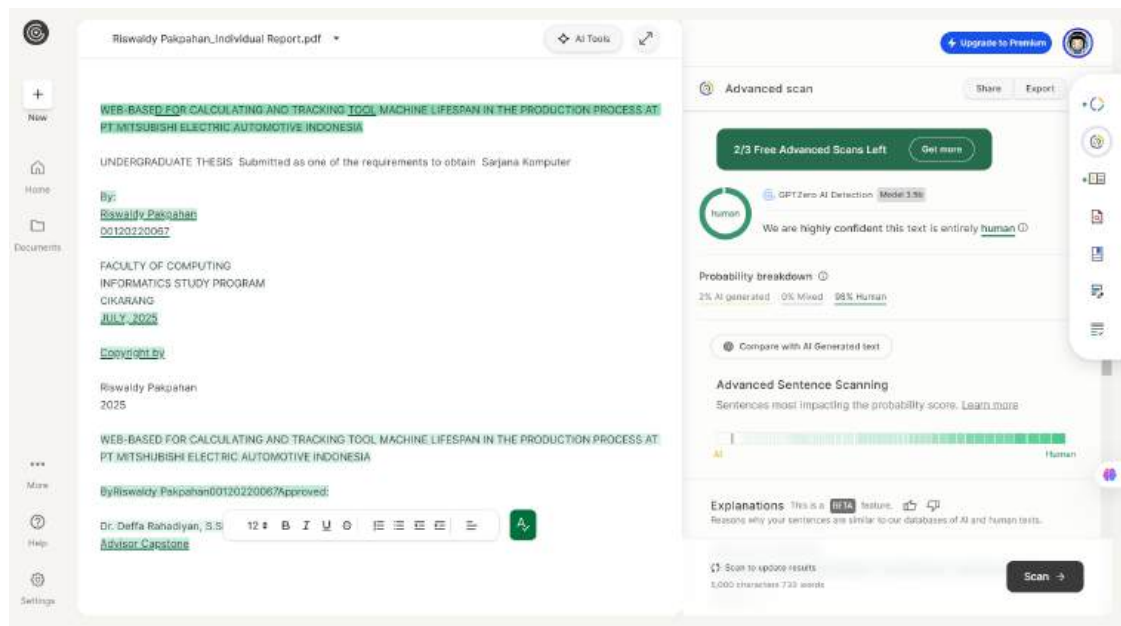
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CHAT GPT ZERO



Chat GPT Zero For All Chapter.

ABSTRACT

The focus of this capstone project is on the problem of the manual approach of calculating and tracking a machine's life span in a manufacturing context being both time-consuming and prone to mistakes. In the case of PT Mitsubishi Electric Automotive Indonesia, the monitoring of the machines and the maintenance reporting were done via spreadsheets as well as paper logs. This resulted in inconsistent data, overdue maintenance, and cascading inefficiencies in operations. To address this problem, I developed a web-based centralized system which automated data entry, machine tracking, and maintenance notifications using Laravel (PHP), MySQL, and JavaScript.

My project role and responsibilities include completing the system's building the data models, and incorporating an RAG-based chatbot AI for user interaction. The main components that I worked on include real-time reporting dashboards, automated maintenance alerts, restoring data, and tool and user CRUD functionalities. There is also role-based multi-user access control and the possibility to create reports in Excel formats. With this solution, machine management is enhanced along with operational reliability, data precision, and strategic action efficiency.

Keywords :

Web-Based System, Machine Lifespan Tracking, Laravel, MySQL, Manufacturing Automation, RAG Chatbot, Predictive Maintenance, Data Monitoring.

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