Title : Production Output Estimation Program Using Machine Learning

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ABSTRACT

During the cooperative education internship at Murata Electronics (Thailand), Ltd., the main responsibility was to develop a production output estimation program using Machine Learning. The development utilized key technologies including the Python programming language, Oracle Database, and the XGBoost model, with the Randomized Search technique applied for parameter tuning. The results for both Product A and Product B were highly successful, as the models demonstrated high prediction accuracy, strong stability, and excellent data explanation capabilities with consistently low average error. The trained models were further developed into a small-scale application, and the forecasting results were visualized through a Power BI Dashboard. The system proved to be practically applicable, enabling users to evaluate whether the overall monthly production aligns with the set targets, thus supporting effective production planning and management.

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