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Summarize huge dataset using Attribute Oriented Induction data mining technique

Abstract

Automated Optical Inspection (AOI) plays a crucial role in modern manufacturing, ensuring product quality and reducing defects. This abstract presents an algorithm designed to summarize AOI data efficiently, leveraging Java programming language, MySQL database, and CSV files. The proposed algorithm follows a systematic approach to handle AOI data.

First, it collects data from AOI machines in the form of CSV files, containing information about inspected products and their respective attributes such as dimensions, defects, and inspection timestamps. Next, the algorithm parses these CSV files using Java to extract relevant information. It then utilizes MySQL database to store the parsed data, enabling efficient storage and retrieval operations.

The database schema is designed to accommodate various types of AOI data, facilitating easy querying and analysis. Once the data is stored in the database, the algorithm processes it to generate insightful summaries. This includes statistical analysis of defects, trend identification over time, and visualization of key metrics.