Abstract

In the era of digital transformation, e-commerce is one of the fastest-growing sectors globally. Process optimization and automation allow businesses to improve efficiency, reduce costs, and enhance user experience. **Hyperautomation**, which integrates RPA (Robotic Process Automation), Machine Learning (ML), and Artificial Intelligence (AI), plays a pivotal role in addressing challenges such as large-scale data processing and real-time analysis in e-commerce. The relevance of this thesis lies in the development of advanced solutions to automate and optimize data collection, classification, and ranking processes for e-commerce platforms.

The objective of this thesis is to design and implement a hyperautomation framework for optimizing data processing in e-commerce. The system integrates RPA for real-time data collection and ML for intelligent data classification and ranking, delivering structured results to users.

The tasks of the research are:

1. Explore the concept of hyperautomation in e-commerce and identify opportunities for its implementation.
2. Develop an automated data collection module using RPA.
3. Train and integrate an ML model for data classification and ranking.
4. Ensure coordinated interaction between RPA and ML modules.
5. Design an intuitive user interface for result visualization.
6. Develop mechanisms for synchronizing and updating data efficiently.

Research Subject: Hyperautomation processes for data collection and processing in e-commerce.

Research Object: A system designed for data optimization using RPA and ML technologies.

The research developed a hyperautomation framework consisting of:

1. **Data Collection Module**: Automates Google search using RPA.
2. **Data Processing Module**: Implements ML for data classification and ranking.
3. **Result Visualization**: Presents structured results in tables and lists.
4. **Module Integration**: Ensures coordinated operation between RPA and ML through a backend system.

The novelty of the research lies in adapting hyperautomation principles, combining RPA and ML technologies to address the specific needs of e-commerce. This system:

1. Performs real-time data collection and processing.
2. Enhances the accuracy and efficiency of automation processes.
3. Delivers highly relevant results to users through intelligent data processing.