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SURVEY ON AUTOMATING PROCESS FOR DATA MINING USING ROBOTIC PROCESS AUTOMATION

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Abstract: Several corporations are automating their non-digital information to keep up with current trends of digitization. Software robot technology is gaining popularity among corporations because of its ability to automate and scale efficiently. These organizations can easily use software bots because they are cheaper, more accurate, and faster. For modern or legacy systems, software bots can process structured and unstructured data irrespective of business size. In recent years, robotic process automation has received a lot of attention. The paper offers a method for capturing data more efficiently and accurately. Using RPA, this method collects data from sources. Due to its ease of implementation and its ability to export data in a required format, this method will be useful to small-scale organizations

IndexTerms - Automation, Data mining, Robotic process automation, UIpath.

INTRODUCTION.

Recent industry research found that most business processes, which are time-consuming and repetitive, can be eliminated with help of automation. This software automation process requires the capture of data and transfer of data, however, some businesses are using systems that aren't compatible with standard API and SFTP batch entry. To solve this problem RPA technology can be utilized. RPA or Robotic Process Automation (RPA) refers to specialized software that can simulate actual human interaction with the Information System (IS) to carry out business processes. So instead of having human employees, the software bot will "manually" enter that data into the system.

Many RPA tools allow users to create a virtual workforce without any prior coding experience. This virtual workforce can observe human digital actions to learn and mimic human behavior, then execute repetitive tasks in rule-based structured business processes. Software bots also work faster than human employees and can work around the clock, nonstop if business policies allow it while providing constant throughput. The software bots are extremely efficient and 100% reliable and precise while performing repetitive tasks.

The objective of this work is to demonstrate the data mining usefulness of robotic process automation and collection process, to accomplish this RPA tool UiPath is used. A software bot is created and programmed to follow a predefined flowchart with help of the RPA tool. This data mining technique is capable of collecting data from various sources and formats, even from systems that do not support API.
The format of this paper is as follows. Section II shows a present literature review of recent work done in the field of RPA. Section III presents details of our proposed method. Section IV describes the implementation of the proposed method and key findings. The work is concluded in Section IV with a summary and description of future research.

LITERATURE REVIEW.

[1] J. G. Enriquez, A. Jimenez-Ramirez, F. J. Dominguez-Mayo, and J. A. Garcia-Garcia This study's goal is to provide a thorough analysis of both the academic literature and the RPA market's current offerings. This work was completed for an academic audience using generally recognized research methodologies, giving the resulting findings high scientific rigor. 54 scientific publications that were gathered from reputable bibliographic sources have been examined for this. The findings indicated there is a trend toward more publications relating to RPA. This is demonstrated by the increasing number of scholarly publications published annually since 2012. For instance, the output of scientific research in 2019 has nearly twice that of 2018. Although several of these papers solely discuss the theoretical underpinnings of RPA, others offer industrial results or experiences of having applied RPA in particular settings, hence the majority of these papers have a comparatively scholarly appeal. One of the most important findings of this analysis is that all of the articles taken into consideration suggest or cover functionalities for RPA systems. However, as no data on associated patents in the field of RPA has been discovered, it is impossible to confirm.

[2] S. Sutipitakwong and P. Jamsri Using the data gathered and tests run, RPA has demonstrated to be efficient in finishing redundant jobs while simply executing the first set of commands. In the long run, RPA is more accurate in finishing redundant activities. RPA still has room for development, though, when it comes to handling difficult tasks.

[3] P. Martins, F. Sa, F. Morgado, and C. Cunha It can be seen from the studies analyzed that there is increasing study on RPA with machine learning, proving that this is a novel and promising topic with applications in many fields. The review made a major contribution to the selected theme. It made it easier to comprehend the possibility of expanding the theme and showed the value of applying AI approaches. The absence of server replacement in the administrative regions of the university was addressed by the objective and automated administrative procedures mapped in a public institution. We have been able to determine which RPA approaches linked to intelligent systems are suitable for applications targeted at managing personnel in the public sector thanks to the information acquired here. Utilize these automated methods for processing.

[4] F. C. M. Ortiz and C. J. Costa RPA is a disruptive technology that can be employed in both basic and sophisticated ways; the latter will ultimately depend on organizational, financial, and strategic reasons. In such a globalized society, such technologies can give digital businesses a significant competitive advantage. However, choosing to stop could lead to several barriers to sustained growth. In any case, incorporating AI and machine learning into the manner in that RPA is used might produce even greater outcomes. RPA can become more intelligent and develop into a source of knowledge within organizations at the expense of human resources by allowing robots to evaluate and improve processes. This raises concerns about a future social paradigm in which machines would take over work tasks more frequently and at almost all levels.

[5] R. Uskenbayeva, Z. Kalpeyeva, R. Satybaldiyeva, A. Moldagulova, and A. Kassymova The suggested methodology satisfies the criteria of government agencies, accounts for the unique characteristics of government operations, and will considerably by incorporating components of business process robotization, government agencies can increase their efficiency and the pleasure of their constituents while also lowering the cost of automating their operations.

[6] P. Hofmann, C. Samp, and N. Urbach RPA have both qualitative and quantitative goals since software robots independently carry out their choreography in an uninterrupted, rapid, flawless, and traceable manner while also being simple to build and relatively inexpensive compared to traditional process automation. RPA is a tool that businesses can use to achieve a variety of goals, including process performance, efficiency, scalability, auditability, security, convenience, and compliance. . In general, it's important to concentrate on software robots' long-term effects on the complexity of IS ecosystems and the organization as a whole, rather than only the short-term advantages of their application. Decision-making hence needs to be strategic in the RPA setting. We add to the body of scholarly literature by providing a comprehensive and organized description of RPA.

[7] A. Jimenez-Ramirez, H. A. Reijers, I. Barba, and C. Del Valle In the context of a BPO, Phases of the RPA process that involve analysis and design are presented in this study as a strategy for improvement. There are particular challenges in this context because, generally speaking, secure connections need to be employed in a way that makes the ISS being used for interaction appear as a "black box" system: inputs are mouse and keyboard events, and outputs are raw images of the screen of the ISS. The processes and tools that make up the suggested method are described in this document. It mostly increases the process analysis's accuracy. There are signs that this strategy would also significantly speed up the initial stages of an RPA study among the extra advantages.

[8] S. Gupta, S. Rani, and A. Dixit As this research has demonstrated, the market's need for RPAs is rising steadily. We can include several robots, machine learning, and AI. To ease engagement and perform tasks across different systems without the use of a human interface, automation is utilized to focus on and comprehend provided applications. Although it typically processes cases at a rate of three times faster or more and with more consistent quality than a person, the robot is capable of processing cases in the same manner. The robot can work around the clock if the application's business hours permit it.

[9] S. Aguirre and A. Rodriguez For repetitive and non-value-added tasks including copying, pasting, extracting, combining, and moving data between systems, RPA is an automation method based on software tools that may mimic human behavior. The key advantages of RPA may save costs, speed up processes, cut down on errors, and boost productivity. One automation technology that requires integration with other tools, such as BPMS, as well as with cognitive automation tools shortly is RPA. Businesses use technologies like IBM's Watson for processes where unstructured data is examined to automate cognitive functions. Further research is necessary to determine how to combine these technologies.

Authors	Proposed System	Merits	Demerits
J. G. Enriquez, A. Jimenez-Ramirez, F. J. Dominguez-Mayo, and J. A. Garcia-Garcia	RPA with Machine learning	RPA allows automation of tasks with intelligence at scale thanks to machine learning and deep learning.	Attrition, Sprawling technology, Added complexity Magnification of problematic processes.
S. Sutipitakwong and P. Jamsri	Using Data gathering and testing run	Boost Productivity Across the Board Improve Efficiency to Generate Savings Hit Accuracy Goals with Reliable Consistency Improve Business Data Security.	RPA has the disadvantage of adding complexity. Business processes can be changed easily with RPA, however
P. Martins, F. Sa, F. Morgado, and C. Cunha	Rapid Growth in RPA	In addition to being able to complete tasks faster, RPA is also more affordable. Because of this, organizations may see an increase in productivity without an increase in profits.	Recruiting skilled employees.
F. C. M. Ortiz and C. J. Costa	RPA and AI	As a result of eliminating tedious tasks, employee engagement and satisfaction have improved.	Loss of jobs.
R. Uskenbayeva, Z. Kalpeyeva, R. Satybaldiyeva, A. Moldagulova, and A. Kassymova	RPA with Deep Learning	Since robots are capable of faster and more precise execution of simple tasks, they can increase accuracy and speed.	Costs associated with the initial investment.
P. Hofmann, C. Samp, and N. Urbach	RPA Automation	An increased focus on long-term strategy will lead to faster digital transformation and increased innovation.	Recruiting skilled employees.
A. Jimenez-Ramirez, H. A. Reijers, I. Barba, and C. Del Valle	RPA Black Box System	Higher productivity and ROI for human workers means reduced costs due to more time focused on higher-priority work.	Employee Resistance.
S. Gupta, S. Rani, and A. Dixit	Robots, machine learning, and AI.	Reduction in Human Error Zero Risks 24x7 Availability Digital Assistance New Inventions Unbiased Decisions. Perform Repetitive Jobs Daily Applications.	Robots need a supply of power, The people can lose jobs in factories, They need maintenance to keep them running, It costs a lot of money to make or buy robots, and the software and the equipment that you need to use with the robot cost much money.

S. Aguirre and A. Rodriguez	RPA Development Tools	In order to automate business processes, RPA Developers begin by analyzing them and determining if they can be structured or automated. Developers then design automated processes based on this data.	Performing non-standard processes requires human interaction, and automated solutions cannot be used. RPA can automate only a limited number of tasks.

CONCLUSION.

From tests performed the RPA showed promising results. Data collected by the software bot with just initial commands was almost accurate. The RPA filters are integrated directly into the workflow making the system extremely efficient and simple. While RPA is accurate and fast following simple workflow, more work needs to be done for more complex operations. Future work focuses on the implementation of AI into RPA for more efficient workflow. With help of AI techniques, RPA will become more intelligent and can be used for data mining more effectively. Implementation of AI can be used to create a self-modifying RPA workflow to collect important data more accurately and process it as per the user's needs.

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