



Using RPA processes in hospital systems using artificial intelligence

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Cite this study: Qordja, G. (2023). Using RPA processes in hospital systems using artificial intelligence. *Advanced Engineering Days*, 7, 133-135

Keywords

E-Albania
RPA
Artificial Intelligence

Abstract

The increase in the amount of data to be processed today through hospital systems has led to the use of computer applications to accurately manage processes and decision-making. Robotic process automation (RPA), also known as software robotics, uses automation technologies to mimic back-office tasks of human workers, such as data mining, filling out forms, moving files, etc. Artificial intelligence (AI), the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. The term is frequently applied to the project of developing systems endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from past experience. This paper will study the aforementioned technologies to realize the process of automatic data generation for hospital systems using E-Albania. E-Albania is the government portal where the public services found in the offices and physical counters of the institutions are offered electronically thanks to the Government Interaction Platform that connects the systems of the institutions with each other. The portal is conceived as a one-stop electronic office where the citizen registers using his identity card and is served by searching and applying for the service he needs. In addition, the use of artificial intelligence in making decisions that will be taken from the data generated by the processes of automation, data generation.

Introduction

The trend of using automatic business processes has recently become a necessity. E-Albania is an instrument of a pro-informatics society built in electronic form programmed on the web. E-Albania has been developed as a multifunctional portal and is considered as a portal where citizens and businesses are provided with electronic public services. Services are available 24 hours a day, 7 days a week. The portal started as an investment of the European Union in 2009. In the initial phase, it was very simple including 6 electronic services and 4 systems connected to the government interaction platform [1].

In 2022, there are 240 institutions connected to the E-Albania governance portal. This is not just a number, but a clear indicator that reflects the usefulness of this portal, how Albanian institutions offer online services to their citizens and businesses.

Automation can run repetitive tasks. This frees up valuable time [3] for people to take on more important tasks that require judgment and rational thought. This makes the whole job more efficient and cost effective. Artificial Intelligence is designed not only to look for patterns, but also to learn from experience, so that they can choose the right answers for themselves according to situations.

The development of Artificial Intelligence is rapidly accelerating and the combination of Artificial Intelligence with automated robotic processes is beginning to change the way businesses are operating [2]. Artificial intelligence is widely used in various industries and business fields, ranging from healthcare, finance, manufacturing to law, education, etc. With the help of machine learning, doctors can diagnose diseases faster than before [2].

Van der Aalst et al. [4] describes RPA as a tool that operates on applications installed on computer systems through a graphical user interface, as a human would.

RPA is not a physical machine, but a software system that automatically communicates with other digital systems, sends and receives data, manipulates them and inserts them into other applications [4].

Material and Method

There are many functionalities of online government services in Albania. Figure 1 shows a general view of the national interface of Albania, where, in addition to the civil services that are fully operational, there are functions related to health [9].

In this interface, all the information of the registration of reports of the citizens of the Republic of Albania is connected through Albania, where in real time the report is generated by the doctor and goes automatically to the work center. As the reports are generated, there are other functionalities related to the application for drugs subsidized by the Albanian state.

The complexity and growth of data in healthcare means that artificial intelligence (AI) will be increasingly used within the field. Machine learning is a statistical technique for fitting models to data and 'learning' by training models with data. The study was conducted in 4 hospitals in Riyadh, the capital of Saudi Arabia. The results were related to the fear of job replacement by AI and the school of knowledge about AI technology. Results of the study needed for training on the advantages, challenges and issues related to me and AI in possible care and the potential of technology to have a professional care process and efficiency.

The training would expand the knowledge of AI workers and improve their potential for the care of his sector in their care. Governments and universities can play an important role in advancing the care of research using AI technology.

Furthermore, the current status of AI use in healthcare in Saudi Arabia provides a clear market for AI solution developers [6].

In healthcare, the most common application of traditional machine learning is precision medicine that predicts which treatment protocols are likely to succeed in a patient based on various patient attributes and treatment context. This field, NLP, includes applications such as speech recognition, text analysis, translation, and other language-related purposes. There are two basic approaches to it: statistical and semantic NLP. Statistical NLP is based on machine learning (in particular deep learning neural networks) and has contributed to an increase in the accuracy of recent recognition. It requires a large "corpus" or body of language from which to learn. Compared to other forms of AI, they are cheap, easy to program, and transparent in their actions. Robotic process automation (RPA) doesn't really involve robots - just software on servers [5]. A recent development in the field of process mining is that performance and compliance issues automatically trigger remedial workflows leveraging both data and existing systems [5]. AI and Robotics are being used at many points of service for COVID-19 to a significant extent. For the detection and diagnosis of COVID-19, newly discovered AI-driven methods have helped to reduce the pressure on conventional methods [8].



Figure 1. Main interface of e-Albania



Figure 2. Report generation interface



Figure 3. Report generation interface

Conclusion

1. The connection of Hospital Systems, clinics in Albania helps in the management of drugs through pharmacies.
2. The use of artificial intelligence inserted as functionality in Robotic Business Processes ensures automatic decision-making in data management.
3. The implementation of RPA and Artificial Intelligence in E-Albania increases the quality of service in the Hospital system.

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