



Shufti Pro

Identity Verification

How automation will improve operational efficiency in the healthcare industry

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Technically Evolved Healthcare Industry- An Overview

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Intelligent technologies such as AI are enabling health organisations to evolve at speed, collaborate with other entities and create deeper, more meaningful relationships with patients across various care settings. AI tools are closing gaps of distance by creating immersive experiences that enhance medical training, improve clinical practices and provide patients with greater access to care, no matter where they are. Ultimately, healthcare organizations will need to turn to AI-powered automation to improve a wide range of services.

”

Dr. Kaveh Safavi

MD, Head of global health practice - Accenture [\[11\]](#).

Advanced technologies like artificial intelligence (AI) and machine learning are already prevalent in business and society, and now they are being applied to healthcare as well. These technologies have the potential to reshape many aspects of patient care and administrative processes within provider, payer, and pharmaceutical organizations. There are a number of research studies suggesting that AI can perform the same or even better than humans at essential healthcare tasks.

The uses of AI to automate knowledge-based professions (like medicine, engineering, and law) may have an annual economic impact of \$5.2 to \$6.7 trillion in 2025 [1].



Do you Know?

According to a research study conducted in 2016, around 35,000 physician reviews revealed that 95% of patient complaints were based on inaccurate paperwork, negative administrative experiences, and poor customer service [2].

AI has various applications in healthcare services which range from automating payments and contracts in hospitals, organizing patient care effectively to accelerating diagnostics and the treatment development process. AI algorithms today are even outperforming radiologists at spotting deadly tumors in a human body, and are further guiding researchers in how to develop cohorts for expensive clinical trials.

AI technology is a collection of different AI-models, and most of them have immediate relevance to the healthcare industry. But the specific operations or tasks they support can vary. Let's see how these forms are automating different healthcare operations including data management.

Machine learning

Machine learning is one of the most basic forms of AI that provides systems with the ability to automatically learn and improve from past experiences without being directly programmed [3]. The most common application of machine learning in healthcare is precision medicine. It predicts what treatment protocols will have more chances to succeed on a patient depending on the patient attributes and the treatment context.

Natural language processing

AI researchers have been working on language processing since the 1950s [3]. This field, known as NLP helps in speech recognition, text analysis, translation, and other goals related to language processing.

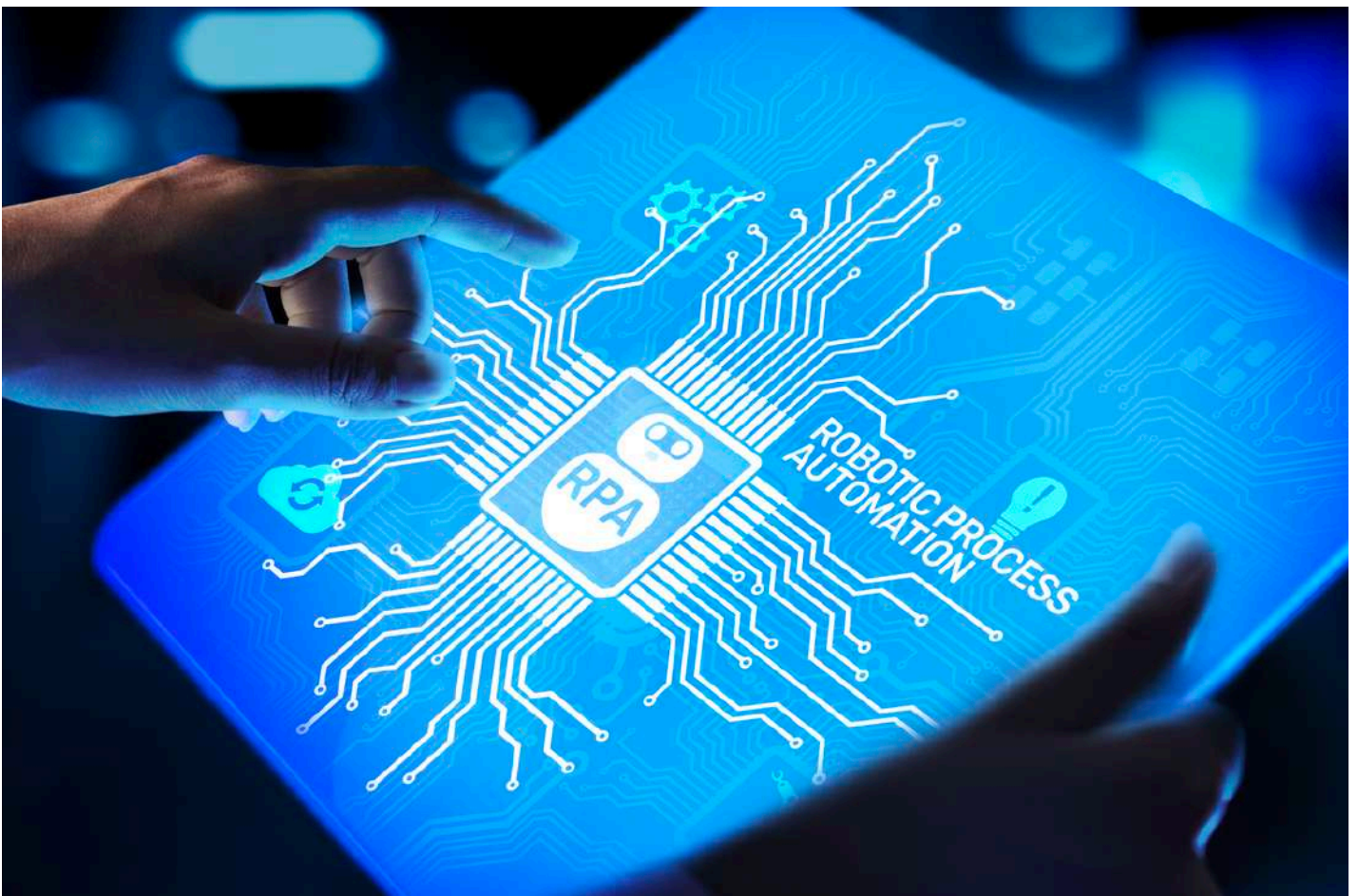
In healthcare, NLP helps in the development, understanding, and classification of clinical documentation and published research. It further helps in analyzing unstructured clinical notes on patients, prepare detailed reports (e.g on radiology examinations), and transcribe patient interactions.

Robotic process automation (RPA)

RPA performs structured digital tasks for administrative purposes i.e those involving information systems as if they were a human user following a script or a set of rules [3]. It combines workflow, business rules, and presentation layer integration with information systems to act like a semi-intelligent user of the systems.

In healthcare, they help in automating repetitive tasks like patient identity authorization, updating patient records or billing details, etc.

In data management, exciting new possibilities are emerging for employing RPA. Data management includes various repetitive tasks in aggregation and curation that can reap great benefit from data automation, therefore applying RPA to large data banks makes tasks including data cleansing, data wrangling, normalization, and creation or updating of metadata more efficient. Moreover, with image recognition technology, it can be used to extract data from faxed images in order to input it into transactional systems.



Why Automation in Healthcare is Important?

What is data automation

Data automation is the use of intelligent systems for collecting, processing, or storing chunks of data in digital form [4]. That is, replacing manual execution or human intervention with machines, software, and other applications of AI is called data automation. For example, a barcode scanner allows you to receive details about a product and save you from manually entering it. This is one of the commonly used processes of data automation.

There are three basic elements of data automation:

- **Extract:** Extraction of data from one or many sources systems.
- **Transform:** Transformation of data into the necessary structure, such as a flat-file format like a CSV.
- **Loading:** Loading of data into the final system, such as the open data portal.

Why is it important?

There is a massive volume of manual healthcare data available today which includes medical journals, patient notes, treatment case studies, etc. that could be utilized to meet multiple healthcare transformation objectives. This data is expected to reach roughly 25,000 petabytes in 2020 [5].

Planning for and managing all that information manually can be an overwhelming and daunting task. By transforming this information the healthcare facilities can digitally store this data in a secure and much more easily accessible place.

Importance of automation in healthcare



Use cases of automation in healthcare:

Effective patient appointment scheduling

Patients' online appointment scheduling process can be streamlined through automation. Factors received through the appointment request, such as diagnosis, insurance carrier, location, personal preferences, etc. can be collected in a detailed report automatically, and forwarded to a referral management representative who is actually in charge of making appointments.

Claims and billing management

Management of claims requests takes up a lot of healthcare administrators' time, as there are several sub-processes that must be handled such as inputting, processing, evaluating, and dealing with appeals. Through automation these processes can be done more quickly and error-free, thereby reducing administrators' appreciable burden.

Recording audit procedures

Healthcare auditing procedure involves multiple tasks for risk assessment. These processes have to be recorded in order to generate comprehensive reports. These audit procedures can be easily optimized through automation in healthcare services. Data recording and report generation can be done automatically and shared with concerned parties for evaluation and approval. Hospital staff can also monitor the progress of these reports and keep track of pending approvals from concerned authorities.

Effective health plans implementation

With improved patient records management, automation can help track more standardized, specific routes towards patients' desired health objectives. Automated processes allow more timely identification of patients who deviate from the defined treatment plans, and consequently, it makes it easier to bring them back on track.

Digital data banks with AI OCR

AI-powered OCR technology could help in digitizing healthcare documents including clinical trial reports, patients' medical records, prescription slips or receipts, and lab experiment notebooks, etc. These documents can be stored in digital data banks which are easy to access and can be used to transfer files electronically, which significantly reduces the use of paper in this industry.


Here is the OCR process:

Upload your document
for data extraction

Try it now!

Upload a document and see how Shufti OCR extracts data from structured documents.

Don't have a document? [Try our sample](#)



Drop your document here, or [browse](#)

SUPPORTS JPEG, JPG, PNG & PDF

File size 20MB max

Highlight and name the data fields you wish to extract

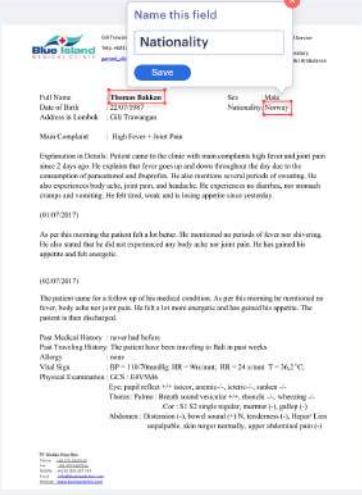
Try it now!

Upload a document and see how Shufti OCR extracts data from structured documents.

[Reset](#)

OCR text [Crop the fields](#)

[Apply this Model](#)



The screenshot shows a medical report from Blue Island Hospital. A dialog box titled "Name this field" is open over the word "Nationality" in the patient information section. The report text includes: "Patient Name: Thomas Balkan", "Date of Birth: 22/07/1987", "Address in Leeds: CU Tronkings", "Sex: Male", "Nationality: (Germany)", "Main Complaint: High Fever + Joint Pain", and a detailed "Discharge Medical Report" section.

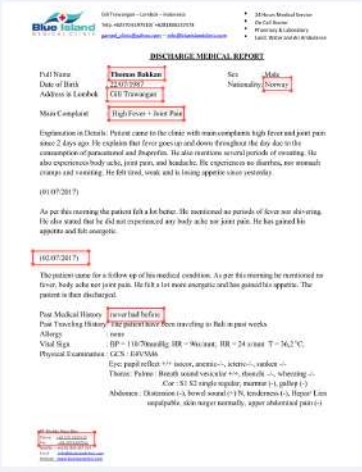
Extracted data is transferred to your cloud servers through API

Try it now!

Upload a document and see how Shufti OCR extracts data from structured documents. [Try another document](#)

[Reset](#)

OCR text [Edit the fields](#)



The screenshot shows the same medical report as above, but with a different set of extracted fields on the left. The "Name this field" dialog box is still present over "Nationality". The report text is identical to the previous screenshot.

Data protection in the healthcare industry

Transformation and storage of the manual documents into digital format is not the only need in healthcare systems, but keeping the digital data secured is also an essential task, as the data contains patient's personal information and is critical for their treatment. According to HIPAA, between 2009 and 2019 there have been a total of 3,054 healthcare data breaches involving more than 500 records [6]. Those data breaches have resulted in the loss, theft, exposure, or leakage of 230,954,151 medical care records. That amounts to more than 69.78% of the population of the United States. So keeping health data stored digitally is not enough.

To keep such data safe, healthcare institutions are bound by data protection and privacy laws such as HIPAA (Health Insurance Portability and Accountability Act). Passed in 1996 [7], HIPAA is a federal law that places a national standard to safeguard medical records and other personal health information. The law identifies "protected health information" as any information that:

- Identifies an individual.
- Is exchanged or maintained electronically or in hard copy (non-electronic).

This means that if the health information has any elements that could be used to identify a person, it must be protected. The data would be protected as long as it is present in the hands of a covered entity or a business associate. Moreover, the information would still have to be protected even if it is printed out of a computer, similarly, oral communications are also covered in this federal law.

Medical and healthcare organizations have to deal with PHI (Protected Health Information) of patients and they have to follow the HIPAA regulation rules at any cost. Automating the patient data and case management ensures the necessary compliance with HIPAA laws. This means that configuring the workflows and usage rights will help these organizations to control the accessibility. In this way, only the approved healthcare professionals will have the authority to access patient-related records.



Do you Know?

Shufti Pro employs improved data protection measures to ensure security and minimize the likelihood of data breaches. We observe GDPR regulations and carry out secure auditory practices to ensure standardized operations and encryption practices.

Benefits of Automation in Healthcare Industry

Labour savings

Automating manual intensive tasks that are better done by machine can be a big time saver. It doesn't have to eliminate employees, but rather it will help to elevate them into higher-functioning roles that make use of the clinical expertise they have been trained for.

Hospital staff have a lot of things on their plates and more often than not, they are assigned tasks which include validating patient data and organizing a huge amount of information. Using intelligent solutions such as OCR-based data extraction and storage software in everyday responsibilities lightens the workload on the staff so they can focus on more important functions.

Improved quality and consistency

As per research, medication errors are estimated to harm at least 1.5 million patients in the US every year, with about 400,000 preventable adverse events [8]. Moreover, according to an estimation, drug prescribing errors cost the US healthcare system around \$177 billion annually [9].

These challenges can be solved by automating medical care tools that are not subject to human error or fatigue, so they can help provide a consistent basis of care activities. A Texas hospital study found that greater automation in the areas of medical records, order entry, and decision support appeared to result in a reduction in deaths, complications, and cost [10].

Reduced waste and expense

Usage of paper and spreadsheets and other workarounds needed for an overfull workload can increase the cost of any operation and also leads to a lot of paper waste. Automating manual processes will help in shifting the manual processes towards digital systems and thus decreasing dependency on papers.

Maintaining easily accessible customer records

With complete medical data being captured and stored in a single place or cloud storage system, it makes it easier for healthcare workers to access the previous health data or reports of the patients under their care. This way doctors can access and study the complete health data of their patients easily and create calculated plans for the future.

Another advantage of automating medical processes is that it allows an organization to make proper computations for their patients. It has always been a challenge that hospitals had to face when accounting softwares was not as sophisticated as they are now. But with recent developments in modern technology, it is possible for hospitals to reduce the usage of paperwork in accounting and to bill their patients without the possibility of a dispute. With the help of Shufti Pro's OCR engine hospitals can sort their accounting processes easily by storing and maintaining the record of all invoices, bills, etc. in a secured database.

How Shufti Pro's OCR Can Help in Automation

Optical Character Recognition (OCR) is one of the technologies that has its application throughout the entire healthcare industry. With OCR, a large number of paper-based documents (structured, unstructured, printed, handwritten, etc.) can be transformed into machine-readable text making storage as well as data accessibility easier.

Features of Shufti OCR

Shufti Pro's AI OCR engine provides efficient data extraction services and is packed with tons of exciting features which include

- AI-empowered text recognition
- Extracts data from 3000+ identity documents
- Available in 230+ countries
- Supports 150+ languages
- Supports PDF, PNG, JPG, JPEG, and MP4/MOV
- 90+% accuracy
- Cost-effective
- Real-time text recognition
- Hybrid Technology (AI + HI)
- Flexible pricing plan

Shufti Pro's AI-powered OCR engine can help healthcare providers in the automation of their data extraction process. Just upload a document and the Shufti AI OCR engine will extract all the relevant data for you. You can easily access, sort, download, or delete the data available in your back office anytime. Shufti Pro follows three simple and easy steps for automating your data, which are:

Digitizing documents

Shufti OCR has the ability to extract data from documents that are in multiple languages including some of the most difficult languages (Arabic, Chinese, Latin) and from multiple types of documents both structured and unstructured. You just have to upload the scanned copy or images of documents you want to extract data from, and the OCR system after analyzing the document will extract, arrange and store that information that can be processed digitally.

Identity verification / Security of data

Shufti Pro also provides identity verification services as well, which can help healthcare organizations to keep a check on the accessibility of this information to authorized individuals. Shufti Pro's identity verification services include:

- Face Verification
- Document verification
- Address verification
- 2 Factor Authentication
- Consent verification

Better medical services with Shufti Pro

Furthermore, there are a number of ways in which using Shufti Pro's digitized identification systems can enable healthcare organizations to provide better medical services to their patients. They can provide:

Effective data collection for planning and research

The Shufti Pro's identity verification system enables access to existing patient records and histories in an instant, allowing healthcare providers and government ministries to effectively plan based on the data collected. The stored information can also be used for research and development purposes.

Managing patient records and treatments

Through proper automated identification and verification methods just like Shufti Pro OCR, medical care providers can manage and access patient records instantly. It allows an easy and secure transfer and sharing of data amongst healthcare institutions, reducing duplicate testing, and allowing for swift and effective patient care. With records being updated in real-time, doctors, as well as support staff, are able to gain access to patients' condition instantly by only identifying them effectively.

Better insurance management

Insurance claims filings can prove to be a tedious process for hospital staff. But automated patient identity verification solutions like Shufti Pro can provide hospitals and clinics with advanced technology that can process insurance claims and assess the benefits that are included in a patient's insurance program. It further enables patients to prove that they have access to insurance and have access to healthcare benefits and programs.

Do you want to learn more about how Shufti Pro
can help in data automation?

[Discuss it with our experts](#)

Apply for a no-commitment free trial
Get non-discriminatory access to all features of the
selective service of Shufti Pro for 15 days.

[Get a Free Trial](#)

Resources

- 1 <https://medium.com/@frankdiana/next-generation-automation-73a17af2b482>
- 2 <https://builtin.com/artificial-intelligence/artificial-intelligence-healthcare>
- 3 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6616181/>
- 4 <https://www.visualcron.com/blog/post/2018/08/13/understanding-data-automation-and-its-importance.aspx>
- 5 https://link.springer.com/chapter/10.1007/978-3-030-51935-3_13
- 6 <https://www.hipaajournal.com/healthcare-data-breach-statistics/>
- 7 <https://www.cdc.gov/php/publications/topic/hipaa.html>
- 8 <https://www.nationalacademies.org/news/2006/07/medication-errors-injure-one-point-five-million-people-and-cost-billions-of-dollars-annually-report-offers-comprehensive-strategies-for-reducing-drug-related-mistakes>
- 9 <https://www.amcp.org/about/managed-care-pharmacy-101/concepts-managed-care-pharmacy/medication-errors>
- 10 <https://hitconsultant.net/2014/07/21/6-big-benefits-of-applying-automation-to-healthcare/#.Xz5IYGozb-Y>
- 11 <https://bpspubs.onlinelibrary.wiley.com/doi/full/10.1111/j.1365-2125.2009.03427.x>
- 12 <https://pubmed.ncbi.nlm.nih.gov/25077248/>
- 13 <https://www.businesswire.com/news/home/20180611005253/en/Health-Organizations-Embracing-Intelligent-Technologies-Prepare-Societal>



Expanding services to 230+ countries and territories in a short period of time, Shufti Pro envisioned playing a pivotal role in creating cyberspace where every transaction is verifiable and secure. With enough experience in technologies like machine learning (ML), OCR, artificial intelligence, and Natural Language Processing (NLP), Shufti Pro strives to provide the best identity verification services to verify customers and businesses online.

Shufti Pro's cost-effective solutions help businesses to prevent fraud and illicit crimes that can ruin the integrity and brand reputation of your business. Our perfect solution suite consisting of KYC verification, AML screening, ID verification, Facial Recognition, Biometric Authentication, Video KYC, OCR, and KYB helps to improve your company's fraud prevention, Know your Customer (KYC) and Anti Money Laundering (AML) regulatory efforts by automating the workflow. With single API integration, Shufti Pro empowers you to verify customers with document checks from [3000+ ID](#) templates and business entities from [200 million](#) companies data.

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