

Intelligent Document Processing

AN EXECUTIVE GUIDE



Lift

accuracy rates

Integrate

AI

Up to

15x

faster

Developer expertise is limited. Timelines are tight. Sensitive data affords no room for error.

New developments in intelligent document processing can finally unlock the data from stubborn paper-based processes. But how an organization integrates data digitization into its applications has an outsized impact on its time to market and the user experience that ultimately determines how effective the solution will be.

Shiva Nathan, Onymos CEO, and Prabhakar Ramakrishnan, CloudWave President, have created applications that have enabled digital transformations across several industries and government sectors. In this guide, they'll explore how a new approach to intelligent document processing can lift accuracy rates, integrate AI, and complete manual processes up to 15 times faster.

The Challenge: Paper Forms and Tedious Reviews

9,858

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106 billion

forms processed by federal agencies annually*

By one estimate, federal agencies maintain 9,858 unique forms and process more than 106 billion each year.* Healthcare organizations are in a similar position, with paper archives dating back decades and stubborn processes that still require manual entry of patient data. CloudWave and Onymos are helping customers in government and the private sector digitize millions of documents, including handwritten ones, that traditional optical character recognition (OCR) solutions could not efficiently interpret in the past.

“It could be people sending a form to an email or submitting a form on a website or digitizing the archived paper document sitting in some room. The requirement is terabytes and terabytes of data,” said Ramakrishnan.

Additionally, CloudWave customers needed a solution that allowed them to quickly check digitized files against the original documents to (optionally) manually validate and resolve discrepancies. Minimizing this bureaucratic process required a set of UI features that didn’t exist in any off-the-shelf OCR products or code libraries. For one of its biggest customers, CloudWave faced the challenge of building new, more efficient solutions with a level of accuracy that existing OCR solutions hadn’t been able to achieve.



“

You might get to 80% accuracy, but most of the work is getting that from 95% to 98%.”

Shiva Nathan
CEO, Onymos

Bringing Intelligent Document Processing to Market Faster

A company integrating document digitization faces a tradeoff: More customization and control with in-house development or faster time to market with a third-party solution. The prior can take months and is unlikely to achieve acceptable accuracy rates unless the organization is willing to pull an engineering team off other projects to work on it long-term.

Solutions from SaaS and low-code platforms raise other issues. Proprietary systems and limited customization options can eliminate the possibility of making essential UX changes and adding functionality critical to the customers' goals.

In CloudWave's case, time to market was essential, as was the UX flexibility to enable a manual review option to validate and resolve data issues.



10x

longer to develop
functionality in-house

“

We were able to build reports and dashboards. We were able to build a very robust approval process using some of the microservices we had. So it was a very plug and-play kind of architecture.”

Prabhakar Ramakrishnan
President, CloudWave

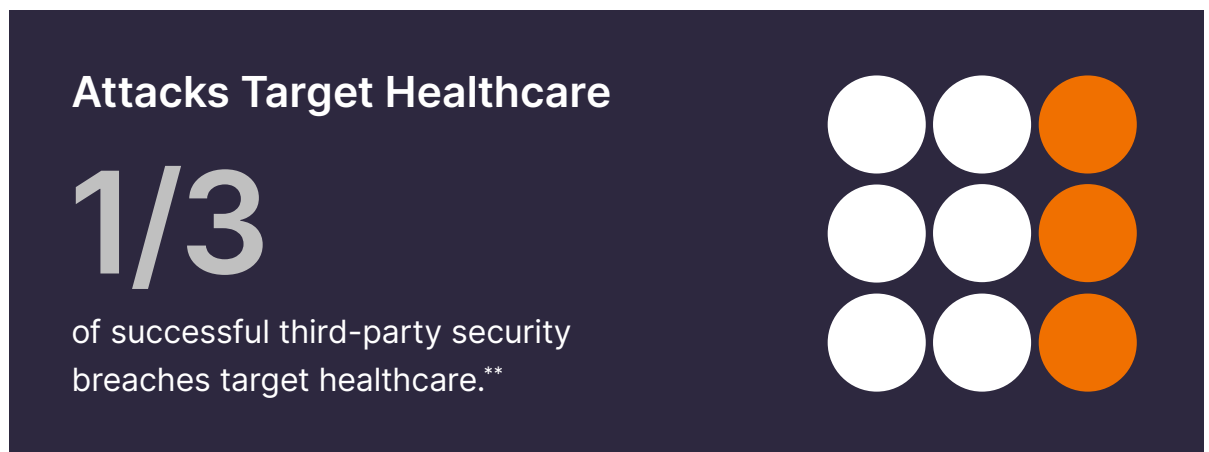
Onymos introduced a new and ground-breaking solution that balances the need for fast time to market with apps that can be easily tailored to users' exact needs. Onymos' DockKnow bundle adds intelligent document processing with high accuracy rates to an existing codebase. The bundle integrates AI and machine learning to derive insights from structured and unstructured data in digitized documents and enables human-in-the-loop processes. It offers around 98% accuracy and continuously improving over time, better code quality, framework compatibility, and improved overall developer experience compared to the typical SaaS and in-house alternatives.

“It would have been a lot more complex if we had done it from scratch or used another third-party system. We would have spent a lot more time on research and development and architecture,” said Ramakrishnan, estimating that it would have taken about 10 times longer to develop the functionality in-house. “We would've spent a lot of time just on the machine learning part of it, which Onymos was able to do in a couple of days.”

The integrated, customizable UX is another area where DockKnow offers a leap in the capabilities available to developers working with document digitization. A healthcare organization, for example, can integrate a pre-built interface that flags potential data issues in medical forms. The interface can highlight fields with potential issues in a Bounding Box, enabling a side-by-side view of the original document for fast human review. By making accurate digitization of health records many times more efficient, intelligent document processing technologies have the potential to derive insights from entire archives of unstructured data. Physician notes, prescription records, and test results from years earlier can inform diagnostics in ways that were impossible before.

No-Data Architecture for Minimal Risk

Forms filled out by consumers frequently contain personally identifiable information (PII), financial details, and regulated data such as student details governed by FERPA or protected health information (PHI) covered by HIPAA. Guarding sensitive data is particularly important in healthcare, as the industry is the most common target of successful third-party security breaches.**





No data passes through Onymos servers

“
From a security perspective, there was really no concern because there is no data leaving the customer’s boundary.”

One benefit of storing information on paper is its relative security. Any intelligent document processing initiative must provide cybersecurity safeguards from the moment documents are scanned through storage and retrieval.

With DockKnow, no data passes through Onymos servers, removing a substantial share of the threat surface. Features incorporated within the application codebase — as opposed to an external SaaS service — allow files to move directly from a customer’s system to their cloud.

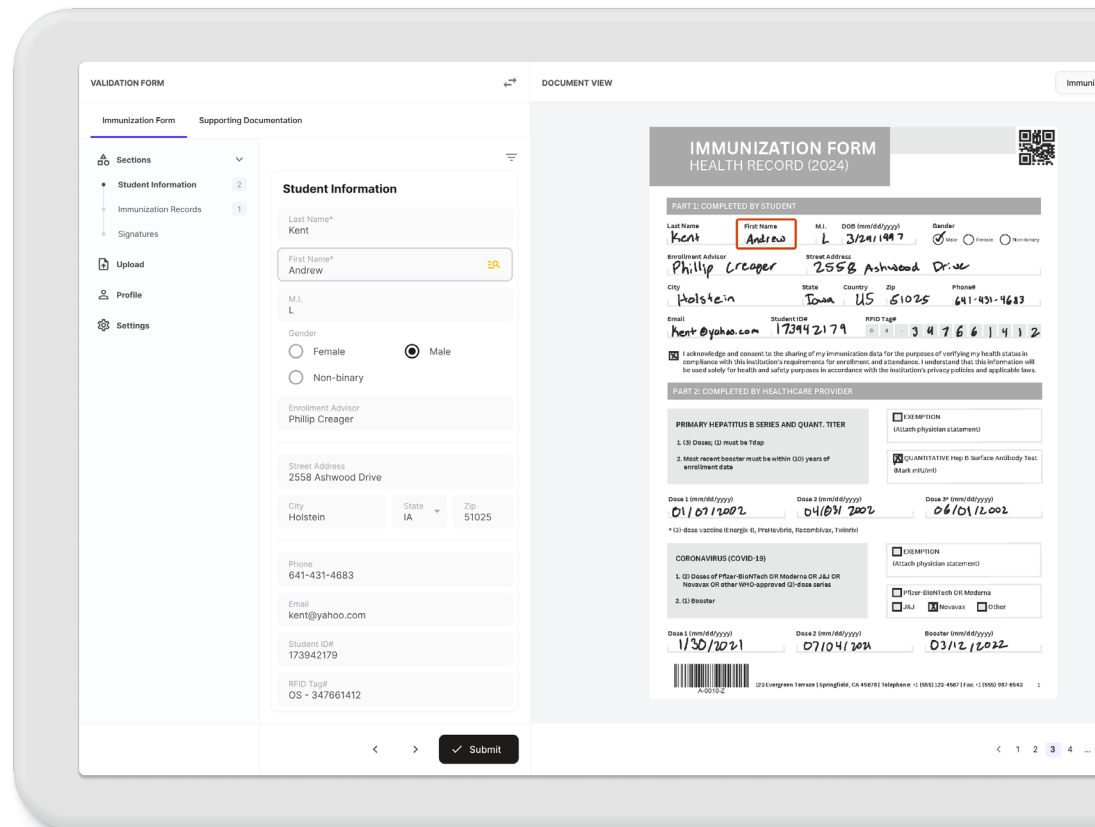
“From a security perspective, there was really no concern because there is no data leaving the customer’s boundary,” said Ramakrishnan, who integrated CloudWave’s document digitization application with cloud services approved by the federal government.

Prabhakar Ramakrishnan
President, CloudWave

Intelligent Document Processing with DocKnow

- Transforms printed and handwritten text into structured data.
- Supports multiple data types: text, numbers, dates, checkboxes, signatures, and more.
- Parses text on untrained, unstructured documents with general text recognition.
- Identifies any type of document with local machine learning.
- Provides ordered data fields to render documents dynamically.
- Captures zoomed-in images of data fields for human-in-the-loop verification.
- Offers fully customizable UI.
- Stores and manages your document templates.
- Enables remote updating of document templates.
- Supports automatic cropping, skew-correction, and resolution enhancement for images.

A pre-built interface available in the **DocKnow UX** can speed up the manual review of potential issues in forms by highlighting relevant fields with a Bounding box right on the original document, alongside the extracted value side-by-side in a web form.



No vendor lock-in

Complete visibility

Customizable UX and dashboards

“

Getting insights is what knowing is all about.”

Shiva Nathan
CEO, Onymos

The Future of Intelligent Document Processing

In the era of AI, data will power models that enable revolutionary applications across industries. Fast, flexible, customizable document digitization capabilities can deliver datasets that have never been analyzed before.

In the near future, intelligent document processing is likely to expand well beyond the paper forms and records where it excels now. For example, AI trained on X-ray scans could help radiologists identify cancer cells earlier or more accurately. Any document, regardless of format, could help build knowledge that wasn't accessible before. "Getting insights is what knowing is all about," Nathan said.

DockKnow makes that happen. With no vendor lock-in, complete visibility, and freedom to create a UX and dashboards that maximize efficiency, DockKnow gives developers a document digitization solution that's unmatched for applications in healthcare, government, and beyond.

[Contact Us To Learn More](#)



Shiva Nathan
CEO, Onymos

A seasoned technology executive and entrepreneur, Shiva Nathan draws from his experience as a software innovator to empower organizations to reach their digital transformation goals. Before founding Onymos, he was head of Intuit's Platforms and Services organization. He also held technical leadership positions at Oracle and CA Technologies, which continue to leverage the software products he helped define and build. Shiva earned his bachelor's degree with honors in computer engineering from BITS Pilani and an MBA from UC Berkeley's Haas School of Business.



Prabhakar Ramakrishnan
President, CloudWave

Prabhakar Ramakrishnan is the founder and CEO of CloudWave. Throughout his career, he has played key technical roles and architected cloud platform deployments for U.S. federal agencies and other organizations. As a chief architect, he established these organizations' cloud governance policies, migration strategies, and application delivery models. Today, he is an industry-recognized expert supporting the transparent, efficient, and secure flow of information and a champion of digital modernization.

Sources

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