fintego
A DXC Technology Company

SUCCESS STORY

Automating the Lab through AI and Computer Vision

Driving increased effectiveness and optimized labor costs

Client: A leading pharmaceutical manufacturer with more than 140 years of experience
Industry: Healthcare
Project Type: Proof of Concept delivered to 2 of our client's research labs

Overview

1 Challenge:

In order to adhere to strict requirements from the FDA, our client, a leading pharmaceutical manufacturer with more than 140 years of business experience, must gauge how quickly their medicines dissolve in the body and in what way.

To analyze the data, the client was taking low-quality video footage of the dissolution process. Afterward, workers would manually sift through video data, highlighting how the medicine dissolves in order to report their findings. This process required a large amount of manual labor and had a high chance of human error.

The client needed a way to automate, drive consistency, optimize labor costs and improve the accuracy of dissolution tests.

2 Solution:

In just 5 months Fintego allowed the client to drastically reduce the majority of time-consuming, expensive, and potentially erroneous human analysis. Fintego created an AI solution that optimizes our client's cameras (in terms of video resolution, frames per second and bit rate) and detects certain events in the video via computer vision. This allows the solution to accurately detect abnormal situations.

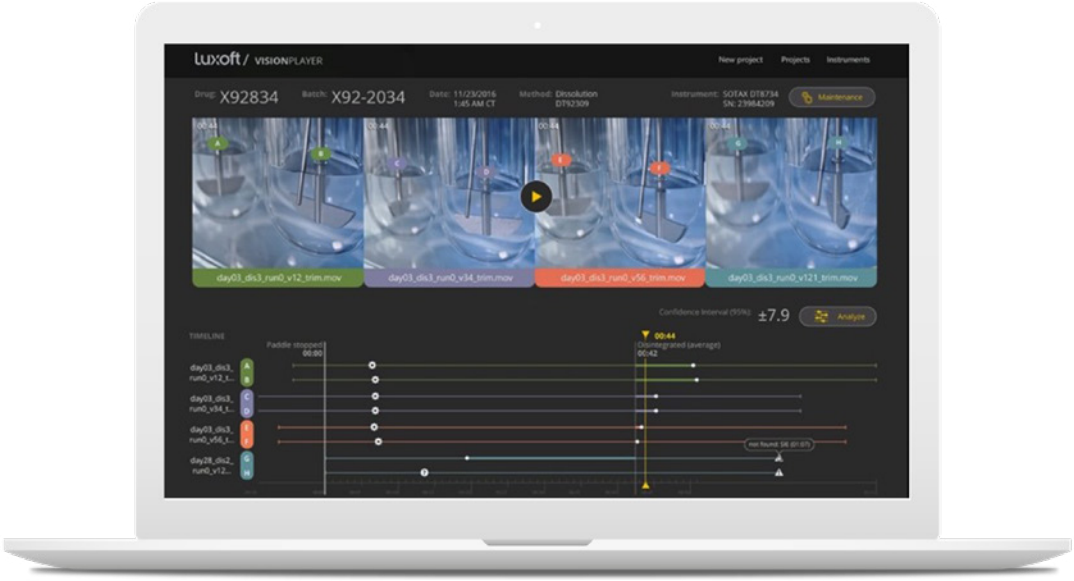
Through artificial intelligence, deep learning and computer vision, our client is then alerted via a user-friendly dashboard. Our client also receives video analytics for their medicine tests through the dashboard.

3 Result:

This solution saves time by avoiding numerous hours of manual labor, allowing workers to accomplish other tasks while cutting labor costs.

It also significantly speeds up the dissolution testing process and medicine time-to-market, allowing our client to keep pace with others in the competitive healthcare industry. This solution also eliminates the possibility of human error by producing objective data.

Solution dashboards



Challenge

Medicines in the lab

In order to adhere to strict requirements from the FDA, our client, a leading pharmaceutical manufacturer with more than 140 years of business experience, must gauge how quickly their medicines dissolve in the body and in what way. To test medicines they create, our client utilizes a special dissolution machine that dissolves medicines in a water-like medium, mimicking the way they dissolve in the human body. These tests take anywhere from 5 minutes to several hours. In order to analyze the data, the client took low-quality video footage of the dissolution process. Afterward, workers would manually sift through video data, highlighting how the medicine dissolves in order to report their findings. This process was inefficient, due to the high amount of manual workload. The manual analysis of video streams generated for chemical tests takes time, which slows down the progress of other key tasks. In addition, the chance of human error was high, and the cost for tedious manual labor was also high.

The client needed a way to automate, drive consistency, optimize labor costs and improve the accuracy of dissolution tests.

Solution

Uniting AI, deep learning and computer vision

In just 5 months Fintego allowed the client to drastically reduce the majority of time-consuming, expensive, and potentially erroneous human analysis. In order to do this, Fintego captured data on how the dissolution machine dissolves different types of medicine samples. After understanding how the machine works and gathering enough data, Fintego created an AI solution that optimizes our client's cameras (in terms of video resolution, frames per second and bit rate) and detects certain events in the video via computer vision. This allows the solution to accurately detect abnormal situations in regards to the medicine, such as excess bubbling or a faster-than-normal dissolution process. Through artificial intelligence, deep learning and computer vision, our client is then alerted via a user-friendly dashboard of anything out of the norm. Our solution also provides video analytics for medicine tests through the dashboard.

"Making the change to AI and computer vision can really evolve pharmaceuticals, and the benefits are hard to pass up."

Gianni Piccininni, Senior Director of Healthcare & Life Sciences, Fintego

Result

Improving accuracy while cutting costs

The solution enabled our client to:

- **Increase effectiveness and cut labor costs:** Our solution saves time by avoiding numerous hours of manual labor, enabling workers to accomplish other tasks while cutting costs.
- **Quicken time-to-market:** It speeds up the dissolution testing process and medicine time-to-market, allowing our client to keep pace with others in the competitive healthcare industry.
- **Unlock new insights:** This solution also allows the client to extract additional data, allowing our client to expand their library of medicines and solution processes. The AI system is trainable, and can use new videos via machine learning in order to automate new medicine tests.
- **Achieve quality data:** It eliminates the possibility of human error by producing objective data, keeping experiments accurate and quick, and avoiding errors that could make testing take longer.
- **Scale:** Adding a new smart camera to accommodate future changes is easy. In comparison, training a human to monitor and analyze footage is both slow and costly.

Ready for the smart lab?

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