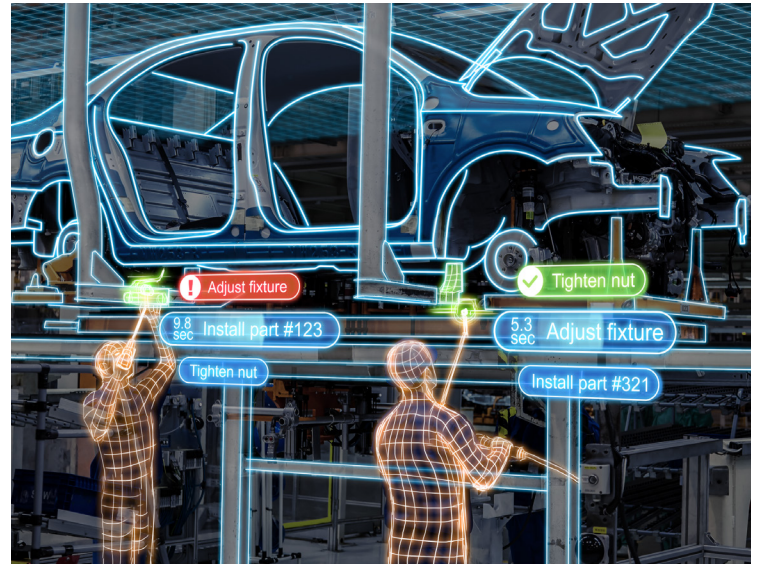


Video Analytics for Manual Assembly

The Challenge

Operators (specially new or temporary ones) on the assembly line make repetitive as well as one-off errors, such as forgetting to do a step. Often these mistakes are caused by inadequacies in the process design itself. These mistakes must be resolved on rework stations, and cost money.



Our Solution

Our Pathfinder platform automatically builds computational models of a complex physical task, such as an assembly activity, given only a handful of recorded demonstrations of the task. Once such a model is built, Pathfinder can finely track the job status from live video, to guide a worker through the task, provide independent training, and perform analytics. Pathfinder's analytics capability identifies non-value added activities across processes, unexpected variability in process times, and traces assembly mistakes through a line; whereas its digital work instruction capability offers audible and visual alerts to help the operator avoid assembly mistakes. We improve first-time yields by **10%**, reduce manual assembly related quality issues by **60%**, and reduce operator training times by **44%**.

Setup

We empower manufacturing staff without any technical training to set up the solution. Our smart camera system can be installed within a few minutes using a convenient mount that we provide. We suggest that the camera be clamped at a height of 3-5 feet above the workbench, looking downwards. It does not need to look at the entire body of the worker, simply hands and the parts being used. Our camera placement is flexible, and works as long as there is a clear line of sight to the activity, while keeping the camera stable.

We make onboarding of a new process extremely simple. We will either set up the process ourselves or assist an associate or engineer from the customer's side to set it up.

Step 1: Capture

Enter a bill of process and record a handful of demonstrations of the process split across roughly 10 workers to capture various working styles (takes 2-3 hours).

Step 2: Label

Label the videos at the level of individual steps (takes ~10 minutes).

Step 3: Deploy

Provide live feedback to assembly operator or passively analyze video for improvements.

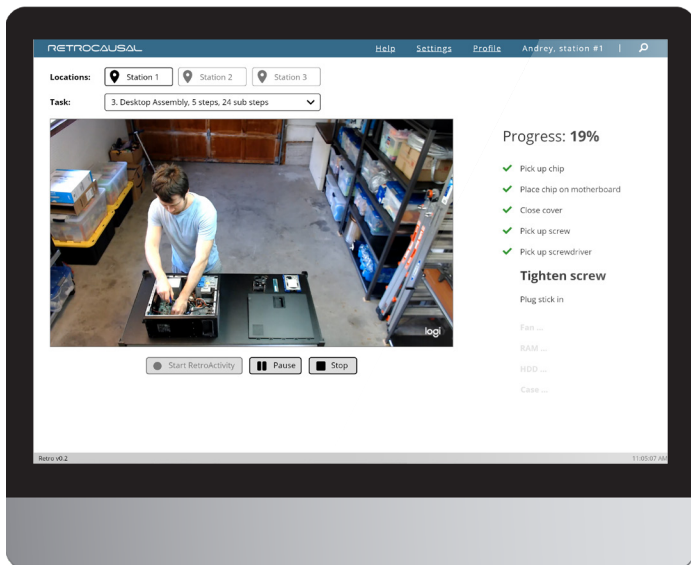
Step 4: Analyze

Get cycle times and step-level analytics, such as standard deviation for each step.



Core Differentiators

- Train and deploy a highly accurate model in days (not weeks or months)
- Scalable
- Cost effective



- **Deploy cameras:** We help you install cameras on your lines without any disruptions, and record and annotate the manual processes to digitize.
- **Setup Dashboard:** You now have a dashboard where you get continuous statistics on your manual processes. You are able to see deviations from standard processes, cycle time, step-level analytics, as well as note where time is being spent on non-value added activities.
- **Facilitate Kaizen event, help associates avoid mistakes:** You are able to use step-level analytics and traceability tools that are part of the Pathfinder platform to improve a process on your line, and help workers avoid assembly mistakes. You observe clear directional advantage of having Pathfinder on your lines.
- **Measure Impact:** You are able to measure and confirm the impact of the Kaizen event facilitated by Pathfinder, or the workers guided to avoid assembly mistakes.
- **Continuous Improvement:** You expand Pathfinder to further workstations and processes, potentially using your own workers. Pathfinder can be set up by some one without a technical background. We continue to provide you with support with 24/7 support line, and regular visits for training and maintenance.

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