

A case study in using custom-trained AI object detection



Case Study:
Rod Lane, President,
Lane Consulting Services,
Los Angeles, California

Website:
LaneConsultingServices.com

Industry:
Real-estate Properties:
Physical Needs Assessments



DBGallery Plan:
DBGallery Cloud-hosted

Client Since
August, 2014

About Lane Consulting Services

LCS has been providing property Physical Needs Assessment reports and other Facilities Studies for fifteen years. LCS's tailored services, attention to detail, and wealth of experience provide customers with the tools needed to guarantee the longevity, financial vitality, and sustainability of their properties.

How DBGallery Helps

LCS uses custom-trained AI object recognition to automatically detect LCS-specific items in their photos as they are added to DBGallery..

Prior to using to DBGallery, LCS used a less modern DAM system which lacked AI capabilities. This resulted in thousands of images taken at property photo shoots needing to be manually tagged with LCS-specific category codes. Not only was this expensive, but it delayed the time it took to get a required-repairs report to the property managers, which is the final deliverable and LCS's core service. Now, 15 minutes after the photos are uploaded to DBGallery, the objects in the photos are automatically recognized and tagged with LCS codes! The report compilation can then begin, resulting in nearly a 25% turnaround time improvement on their core service!

The Setup

First, LCS gathered sample photos for each of the approximately 300 object types (various fence and window types, exit lighting, etc.) it would include in its required-repairs reports. These were fed into the AI so it could learn to distinguish each type of object.

The next major step was to connect their advanced reporting system to DBGallery's API. Along with a few manual photo selection steps, the reporting tool connects to the API to retrieve, display and insert a selection of photos from DBGallery from each category of repairs in the report.

Cutting out a significant piece of the critical path

With the AI model trained, photos from new jobs are labeled and categorized in mere minutes, down from hours. With their reporting tool connected via DBGallery's API, the LCS reporting system is used to finalize their end product, the needs assessment report. The combination of these make for a smooth and efficient process, bringing modern tools together in a way that improves business, cutting out a large piece of the critical path in every customer project. Ultimately, it helps improve people's lives faster by helping properties get upgraded faster.

"One customer project can produce 5,000 photos. Avoiding the time of manually sorting and categorizing that quantity of images was a key factor in moving forward with an AI-based solution."
– Rod Lane



Beyond the significantly faster turnaround time for the reports, two areas of costs savings were realized.

1. The hours of manually tagging photos was time consuming, requiring many hours of tedious work. This has now been completely replaced with just a few dollars of object recognition costs per month. There was some extra costs to initially train the AI, but that was significantly less than just one month of manual tagging costs.
2. Prior to switching to DBGallery, LCS used another digital asset management service. With DBGallery's storage costs at just \$300 a year per terabyte, there was significant saving in storage costs alone, without considering that DBGallery's base service also cost less.

200: # of companies and government agencies LCS provides services to.

300,000 Digital Assets in DBGallery

4 Terabytes: Digital Assets Storage Size

Longevity: LCS had been a customer of an older DBGallery desktop photo management system and took comfort in the fact that DBGallery is still around and innovating a decade later.

A rusty chain-link fence vs a broken wooden fence: Knowing the difference is critical.
LCS takes photos of items in need of repair throughout large multi-unit residential properties. We're talking thousands of photos per property. The items in each photo must be tagged so they can be easily found and added to a report categorized by repair types. Knowing it's a fence that needs repair isn't enough. The report must distinguish between a decrepit rusty chain-link fence and a broken wooden fence. This is because these require different tradesmen to perform the repairs, and also has different costs. To run through the thousands of photos manually to tag and categorize them would take days, costing in both personnel as well as adding days to when a report could be produced. To solve this, the LCS trained an AI to know the different fence types and 400 other types of required repairs. Now, rather than it taking days to manually tag objects in photos, DBGallery and the custom-trained AI object model is used to automatically tag the thousands of photos 15 minutes after uploading them! To use the an old cliché, going this route vs manual, was a real no-brainer.

Going a little deeper into why LCS needed a custom trained AI model, the tags returned the object recognition AI aren't your commo object names, such as 'wooden fence'. It is LCS's own specific codes. E.g. "403.202 Aluminum Window". A generic AI object detection model would have simply returned Window, or in smarter cases, Aluminum Window. But LCS's various procedures and backend systems require specific codes, which the custom AI model was able to provide.

Value Conclusion

- 1 LCS used a custom-trained AI model to shorten the critical path of the services they provide their clients.
- 2 Saved the cost of countless hours per month of manually tagging photos.
- 3 Saved thousands per year in storage and digital asset management service costs.