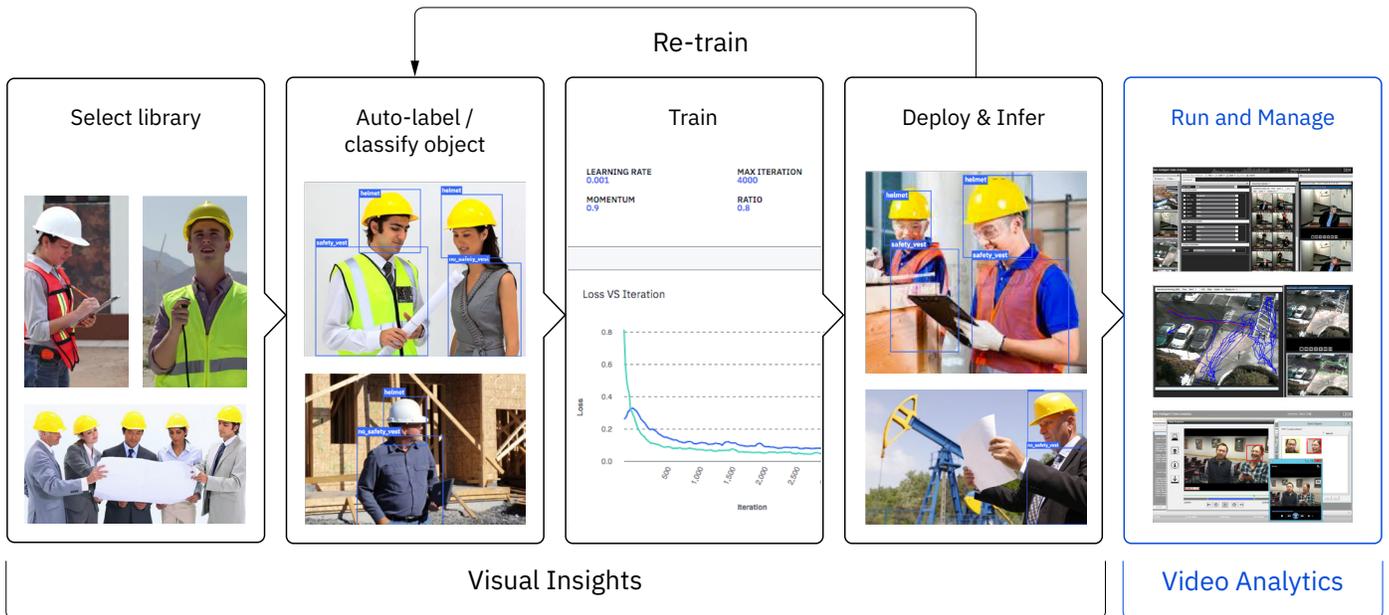


IBM Video Analytics with IBM Visual Insights

**Cameras capture the video, but
video analytics captures the value.**

Use IBM Video Analytics with IBM Visual Insights to create custom, deep learning models to automate video analytics with no data science expertise required.

Simplified visual recognition model creation for object detection



Over 41B hours of video footage is captured weekly¹, but only a fraction of cameras and sensors provide any sort of intelligence.

With only a fraction of video footage being captured with any sort of intelligence, this leaves important data overlooked because humans simply can't process that amount of video footage. Finding traffic patterns, responding to threats, and conducting forensic search is incredibly manual and time consuming. Video Analytics from IBM closes the gap of knowledge by leveraging visual recognition models to track objects and activity in video. Using deep learning technology and powerful algorithms, Video Analytics unlocks valuable data from video, helping to ensure that recorded content receives accurate evaluation, proper attention and necessary action.

And what happens when businesses require the identification and tracking of unique objects or scenarios that aren't supported by out-of-the-box visual recognition models? For example, a company may want to help ensure construction crews are wearing specific safety equipment, identify flaws in products, or track if inventory on the shelf is running low. Creating a new visual recognition model typically requires hiring a team of data scientists to create and train analytics software on a custom model (using machine learning techniques, manually codifying features of the objects in question). This works well for exact matches; but in the real world, error rates are high. To combat this, scientists could manually curate deep learning models to recognize an object under a myriad of conditions. Gathering images, cataloging and marking them could take weeks and would still end up excluding certain conditions from the model due to a lack of available imagery.

Footnote

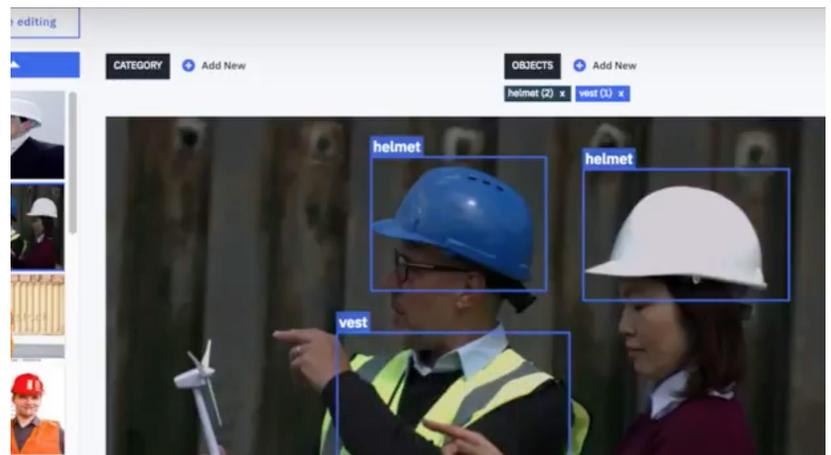
1. <https://technology.ihs.com/532501/245-million-video-surveillance-cameras-installed-globally-in-2014>

In a matter of days and over a few iterations, the system begins to recognize specified objects and activity with high accuracy.

In short, custom model development is an expensive and time consuming process that has slowed many valuable video analytics projects down. But now, an integration between IBM's Video Analytics platform and IBM Visual Insights technology removes the barriers to creating custom visual recognition models, quickly and efficiently supporting unique needs. This democratization of custom model creation gives businesses the power to unlock insights from live or archived video content quickly and easily, without the need for expensive AI skills or advanced development expertise.

Auto-labeling drastically reduces the work of creating visual recognition models

IBM Visual Insights allows business users, with no expertise in deep learning, to develop sophisticated visual recognition models that address varied business applications. Using a simple drag-and-mark interface, subject matter experts can easily label objects in images and videos. With this early learning, the AI system then infers the location of objects in video content using image recognition algorithms, auto-labeling the objects found in the footage, which is then manually inspected for accuracy. In a matter of days and over a few iterations, the system begins to recognize specified objects and activity with high accuracy.



Develop custom models for specific objects

Flexible enough for a wide variety of use cases

Law enforcement, construction crews, retail operations, and many more benefit from video based analysis.

Common use cases include:

1. **Security** - Used by police, public safety agencies, and security personnel at key locations or events, video analytics is used to support identification, tracking and apprehension of suspects while improving public safety and the performance of security teams. This solution uses real-time monitoring and alerts to track known threats (people and objects) proactively. It can also be used as a forensic tool for analyzing recorded videos (including from body-worn cameras) and can provide rapid and accurate video redaction for sensitive video footage.
2. **Workplace Safety** - According to the International Labor Organization every 15 seconds, 151 workers have a work-related accident. Work accidents remain a huge, cross-industry problem, despite safety regulations and procedures. Video analytics applications can trigger alerts when workers enter hazardous environments or scan a construction area to alert supervisors when employees are not wearing safety gear or stray too close to dangerous equipment.
3. **Remote Inspection & Monitoring** - Leverage analysis from drone videos and static cameras to remotely assess the status of critical assets and detect potential damage or threats to equipment, people, vehicles and locations.
4. **Zone Monitoring** - Monitor large infrastructures and restricted areas: stations, yards, bridges, roadways, parking areas, buildings, factories, campuses, neighborhoods and businesses with ease. Leverage sophisticated alert rules such as counting objects and persons, monitoring the direction of traffic flow (i.e. an exit only door where people can leave, but should not be entering) to aid in rapid identification of threat or intrusion. Use advanced statistical analyses to create heat maps and track summaries to find anomalies and patterns hidden in video data
5. **Quality Inspection** - Use visual confirmation in manufacturing operations to scan goods and flag defects. The volume of inspections, number of SKUs, and the variety of possible defects pose challenges to delivering a high-quality product through human inspection alone. Deep learning models deployed on factory floors ensure low decision latency during production.
6. **Retail Operations** - Retail operations have to constantly monitor a wide range of variables - staff, inventory, vendors and shoppers introduce risk and uncertainty. Video analytics can provide confident oversight for everything from inventory control for tracking where shipments are sitting, when they arrive and where they are stored, to check-out fraud for monitoring that each item on the belt is properly scanned.

Key Capabilities:

Video Analytics

IBM Video Analytics uses sophisticated machine learning algorithms for both real-time analysis and post-event, forensic analysis, giving organizations the ability to easily find relevant images and critical information across multiple video files from multiple camera types.

- **Scale & credibility:** Video Analytics can successfully deploy analytics across hundreds, or thousands of cameras and search across devices in seconds. The system is trained to avoid false positives and uses deep learning capabilities to avoid alert fatigue.
- **AI-Powered:** Video Analytics AI-infused video analytics can process any recorded camera stream (fixed camera or in motion), from CCTV to body worn cameras, and search for persons of interest in seconds, drastically speeding up search times and results. Additionally, deep learning capabilities enable Video Analytics to be trained to recognize new objects and events that make sense for your business.
- **The IoT connection:** For driving even more value, video footage can be integrated with sensor data, third party trends and weather forecasts to anticipate behavior and respond to threats in real-time.
- **Real world conditions:** Video Analytics makes sense of difficult scenes and situations, such as crowded views and challenging environmental conditions such as snow, headlights and inclement weather.
- **Intelligent Redaction:** Achieve redaction of video footage in minutes, not days, through automated tooling.

Visual Insights

IBM Visual Insights includes an intuitive toolset that empowers subject matter experts to create visual recognition models, without coding or deep learning expertise. It includes popular deep learning frameworks and their dependencies, and it is built for rapid deployment and increased team productivity.

- **Image classification:** With a few clicks, deep learning models can be trained to classify images or detect objects of importance. Coding to build models is now replaced by simply dragging and dropping images into categories and drawing boundary boxes to tag objects. Technical details like neural networks and hyper-parameters are abstracted and pre-configured to learn from sample corpus.
- **Auto-labeling:** Currently, humans teach machines through the laborious and error-prone process of drawing boxes around specified objects in many different images. Auto-labeling uses intelligent inference to speed up the work significantly and aid in the reduction of errors.

About IBM Video Analytics

IBM Video Analytics uses powerful algorithms and deep learning technology to rapidly identify and analyze security risks and anomalies captured in video content. By enabling enterprises to more effectively understand and respond to emerging threats and issues, Video Analytics dramatically lowers operational costs and risk.

To learn more, visit: <https://www.ibm.com/us-en/marketplace/video-analytics>

About IBM Visual Insights

IBM Visual Insights makes Computer Vision with deep learning more accessible and more performant. Visual Insights includes an intuitive toolset that empowers business users and data officers to train models for computer vision, without coding or deep learning expertise. It includes popular deep learning frameworks and their dependencies, and it is built for rapid deployment and increased team productivity.

To learn more about IBM Visual Insights visit: <https://www.ibm.com/products/ibm-visual-insights>

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Produced in the United States of America
May 2020

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