

The proofV Pocket Guide to Proof-of-Concepts: Video Analytics



This pocket guide sums up everything you need to know about running proof-of-concepts on video analytics technologies.



Whether you are the person tasked with finding the right solution for your company's new video analytics service or you are looking to understand the scope of running PoCs on video analytics technologies, having a go-to resource with the challenges, metrics, infrastructure and business benefits of video analytics PoCs all in one place makes the whole process easier.

This pocket guide is that go-to resource.

The growth of digitalization trends like IoT and smart cities has industries across the board increasing their use of video surveillance.

Consequently, choosing the right video analytics solution to analyze and contextualize raw video footage is an integral part of digital transformation.

Video footage is seldom referred to as data, but that is exactly what it is. Raw video footage is unstructured data that can be formulated into valuable insights, just as personal information, locations, user numbers and other readily quantifiable data is.

The challenges of running proof-of-concepts on video analytics solutions are therefore a combination of video-specific challenges and classic data analysis challenges.

Keep **In Mind**

1

Accuracy vs. Speed Tradeoff

The ideal video analytics solution accurately detects objects by analyzing very few frames of footage.

The reality, though, is that there is always a bit of a tradeoff between accuracy and speed.

You need to determine which is more important for your innovation needs and find a solution that strikes the right balance.

When running a PoC on video analytics technologies, you need to be able to measure and compare how well the algorithm processes the video data and how many frames it needs to accurately identify and process objects.

2

Quality of Video Footage

Large companies often have several video sources of varying qualities that need to be analyzed.

Each video analytics solution has a minimum video quality that it can process, and therefore extract valuable insights from.

To prepare for a video analytics proof-of-concept, you need to understand the quality of your company's video footage, particularly the specs of the lowest quality footage.

With this information, you can then either set requirements for participating in your PoC, or test for processing low quality footage in your PoC.

3

Decoding Video

Decoding video is the pivot point in any video analytics software's workflow.

If a solution is unable to decode your company's video, whether because of its codec or any other reason, it will not be able to process the footage and therefore will not provide any added value.

In your video analytics proof-of-concept, you must be able to test whether a technology can decode the quality and type of video footage your company's cameras produce.

Existing Infrastructure

Keep In Mind

4 Dependency

The success or failure of a video analytics software on your production environment is largely dependent on your existing video equipment and infrastructure.

You need to find a vendor that 1) is compatible with all of the cameras and video management systems you currently use, and 2) is likely to be compatible with any additional components you may use in the future, and 3) can overcome hurdles from any existing gaps in your network infrastructure.

Your PoC testing environment needs to replicate the intricacies of your production environment so that you can really put the video analytics software to the test.

5 Maintenance

Video analytics softwares need to be updated every time you want them to be able to identify new information such as new car models, new people, new products, etc.

This requires compiling raw data, populating a database and training the software.

You need to consider how frequently you would need to train the software, and compare how much time each solution you are testing would take to sufficiently learn the material. You would also need to think about the resource allocation your team would have to dedicate to training each solution.

6 Computing Power

The amount of computing power a video analytics technology needs is based on the size and complexity of your video ecosystem.

The larger and more complex your network of cameras, video data and video management systems, the more computing power a software will need.

To reliably test how a video analytics software will perform on production, you need to create a PoC testing environment that recreates the circumstances and resources of your video ecosystem.

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Video
Analytics

Challenges
You'll Face

Evaluation
Metrics

What You'll
Need

Making the
Case

About proofV

Evaluation Metrics

1 Efficiency

How quickly and accurately the solution can provide alerts for detected objects

A key advantage of video analytics software is that your team does not have to watch live video footage in order to extract insights from it. To provide their full value, video analytics solutions should provide accurate results as close to real time as possible.

2 Computing Power

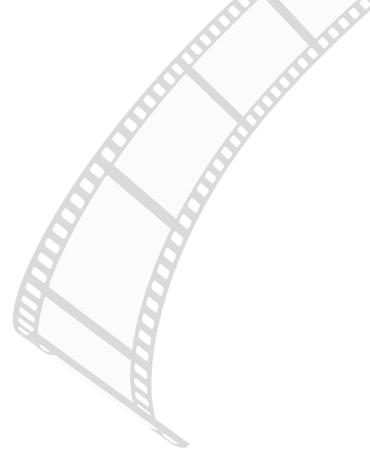
How much computing power the solution requires to process video data from your ecosystem

Video networks can be broad and complex. The less computing power a solution needs to process the varied incoming data, the better. You can compare multiple solutions by measuring the amount of computing power they each require to process one hour of footage.

3 Compatibility

Whether the algorithm is capable of processing data from your company's existing infrastructure

The solution needs to be able to process all of the footage streaming in through your infrastructure, which may include mass amounts of cameras of varying types and qualities. To test a solution's compatibility with your infrastructure, feed it the lowest quality footage you have to see if the algorithm can analyze and process it.



Evaluation Metrics

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— Evaluation
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Need

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Case

About proofV

Smart Alerts

How smart the algorithm is in contextualizing data and reacting to unknown objects in real time

The solution should be able to understand the context of certain elements being detected together and convey it through smart alerts. It should also be able to identify and communicate when it detects an object that it does not recognize.

4



Learning New Data

How smart the algorithm is in learning new data

The speed and capability with which an algorithm learns new data, such as new objects to detect or new faces for facial recognition, depends on how smart the algorithm is. Self-learning algorithms will get smarter with every image you feed them.

5



Adaptability

How the algorithm adapts to unforeseen technical challenges

Video streaming can be affected at any given moment due to drops in connection strength, video quality, etc. When running a PoC on video analytics solutions, be sure to simulate these circumstances in your testing environment to see how the solutions react to the challenge.

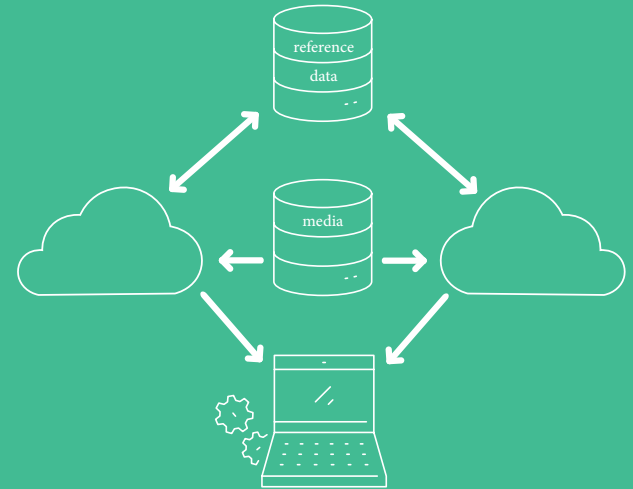
6



What You'll Need

Each proof-of-concept requires a unique testing environment customized for the technologies being evaluated. Below is the infrastructure you'll need to provide to configure an effective testing environment for video analytics technologies:

- Video management server (media server) to store various types of video footage, such as: low/high quality, low/high frame rate, low/high activity, etc.
- Database of reference data for the solution to compare media server footage with (eg. in case of facial recognition)
- Computing power for each solution so you can compare how much they each need in order to function
- API functions or database link to retrieve data from both the video management server and the reference database
- Hardware to view the video analytics output



Making The Case

The video analytics market is skyrocketing thanks to its increased use outside the security arena.

From retailers heat mapping shopper movement to manufacturers tracking product flows to governments making cities smarter, video analytics is a must-have for any business that is digitizing its activities and optimizing its processes.

Video analytics solutions turn surveillance footage into a quantified and actionable source of data that allows businesses in any industry to extract insight from their video.

Solutions can flag anomalies in real time and identify patterns and trends with context-building capabilities like facial recognition, object identification, object detection and perimeter entry detection.

Choosing the right video analytics software for your company depends on what you are looking to achieve with the technology. Testing and evaluating video analytics solutions allows you to make an informed decision about which solution is most compatible with your existing infrastructure and best meets your innovation needs.



\$13.4B

Projected Size of the
Global Video Analytics
Market by 2023

25.7%

Projected Compound Annual
Growth Rate of Video Analytics
Market from 2017-2023

About prooV

prooV is an end-to-end solution for running proof-of-concepts. It eases the burden of evaluating technologies by empowering you to:

Define and open

PoC opportunities that reflect your innovation needs and goals

Configure and populate

dedicated PoC environments

Be discovered

by PoC-ready vendors offering state-of-the-art solutions

Analyze, evaluate and compare

solution performance based on the KPIs that are important to your business

And more!

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