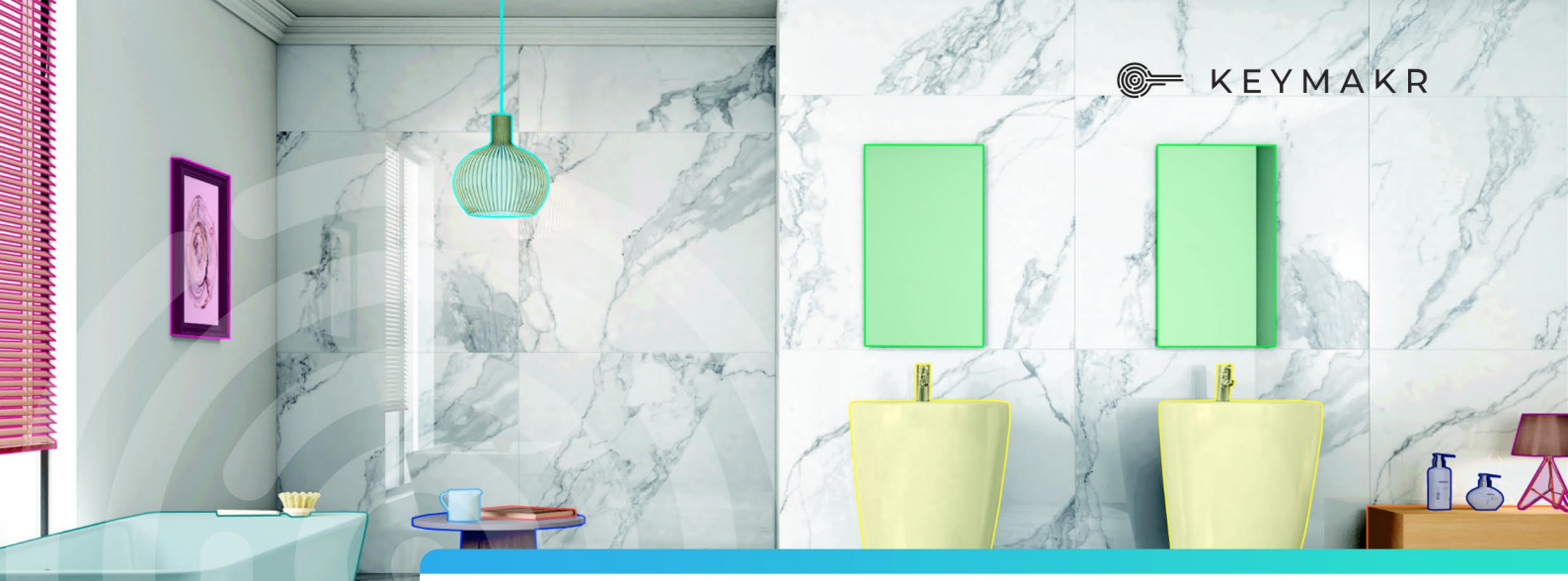


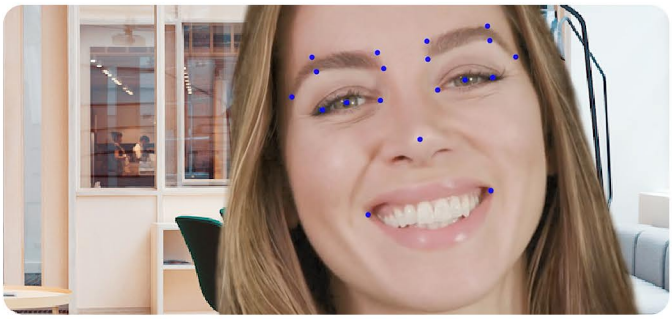
IMAGE ANNOTATION
FOR AI PROJECTS

Image annotation is an essential process for many AI companies but it can also be a challenging one. Creating effective, efficient image training datasets for machine learning can be a drain on resources and focus for innovators.

Image annotation types:

A number of different techniques are used when applying information to AI training images. These different annotation options can be used to create training data that can respond the the diversity of contexts present in the real-world:

Key points annotation:



This technique is primarily used to label important single points in images. Key point annotation can locate specific features in images for example on human faces.

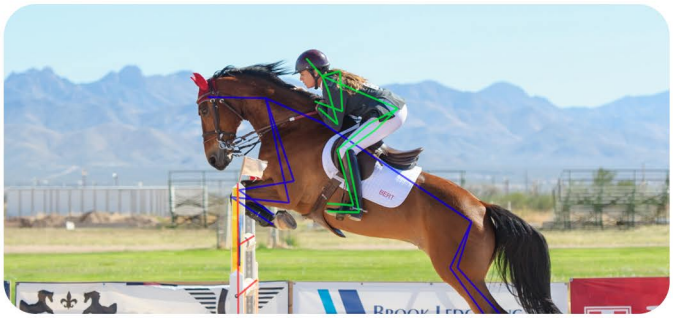
Lane annotation:

Linear and parallel shapes and structures can be traced using this technique. Annotators use a lining tool to track the shape of objects like roads, railway lines and pipelines.

Polygon annotation:

This annotation type is essential if developers are looking to capture irregular or complex shapes. Polygon annotation is at the core of semantic segmentation methods because it enables the precise division of each pixel into semantic classes.

Skeletal annotation:



This technique enables AI models to identify and interpret the bodies and movement of humans. Annotators attach lines to limbs and join them together at points of articulation, like shoulders or elbows. This technique is often deployed to produce training data for sports and home fitness AI applications.

Bounding boxes:

This is the fastest annotation technique, and also the most common. Using annotation platforms workers drag bounding boxes around objects. The downside of this technique is that it does not fully capture precise shapes

Image annotation services and tools:

Companies can opt to use automated image labeling technology to produce datasets, or they can choose to employ the services of data annotation providers, like Keymakr

https://keymakr.com

IMAGE ANNOTATION SERVICES:

Outsourcing data annotation to dedicated services, like Keymakr, can help to take the pressure off of computer vision pioneers whilst guaranteeing high-quality, responsive image annotation. In order to annotate images it is necessary to locate, outline and label relevant or target objects.

AUTOMATED ANNOTATION:

There are a number of AI assisted labeling tools that have the capacity to accelerate the image annotation process. This can mean producing automatic polygon outlines of objects for semantic segmentation, but it can also mean auto-labeling objects across thousands of images.

ANNOTATION SERVICES VS AUTOMATED TOOLS:

Auto-labeling platforms can create training datasets quickly. By bypassing many human performed labeling tasks this technology reduces labour time and labour costs. However, relying too heavily on automated annotation techniques can have a negative impact on image data quality. Keymakr's in-house team is capable of working with a wide range of annotation methods and types. They are also led by experienced managers who know how to guide a large scale image annotation project.

SMART TASK DISTRIBUTION SYSTEM

Keymakr's smart task distribution system assigns tasks to annotators according to their strengths and weaknesses. This means higher levels of precision and productivity.

24\7 MONITORING AND ALERTS:

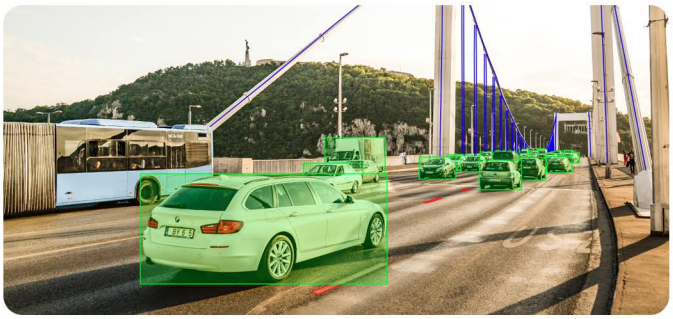
Keymakr's proprietary platform also allows managers to access information about the progress of a particular project at any time.

VECTOR OR BITMASK:

Keymakr offers both bitmasks and vector graphics to suit the needs of any computer vision project. Keymakr can also easily convert between image types if so required.

IMAGE ANNOTATION USE CASES:

By providing AI innovators with accurate and flexible image annotation, Keymakr has played a role in a number of exciting AI use cases.

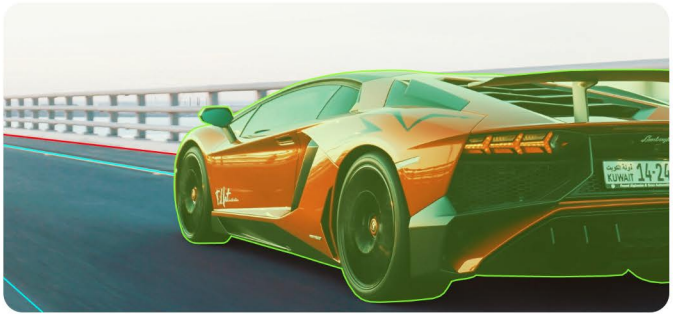


AUTOMOTIVE INDUSTRY:

Keymakr annotated over 20,000 images of roads from Europe and North America. These images were segmented, and each pixel was assigned to a particular object class (cars, trees, sky, road, signs).

SKELETAL ANNOTATION FOR SPORTS:

Adding skeletal annotation to images of sports can help computer vision models to interpret human body positions. This challenging annotation technique can empower applications which are used for training and coaching in a variety of sports.



POLYGON ANNOTATION FOR THE INSURANCE SECTOR:

By outlining images of car parts with this technique, Keymakr's team was able to assemble a dataset for an insurance industry client. The computer vision model trained with this data is capable of rapidly, accurately and autonomously processing insurance claims.

A BEGINNER'S COMPLETE GUIDE TO IMAGE ANNOTATION FOR MACHINE LEARNING

The images you use to train, validate, and test your algorithms will directly impact the performance of your AI project.
The higher the quality of your annotations, the more accurate and precise your models are likely to be.

WHAT IS IMAGE ANNOTATION?

Image annotation is the process of labeling an image to show a machine learning model which features you want it to recognize.

Training a machine learning model to recognize desired features requires the principles of supervised learning. The goal is for your machine learning model to identify desired features in a real-world environment—and make a decision or take some action as a result.

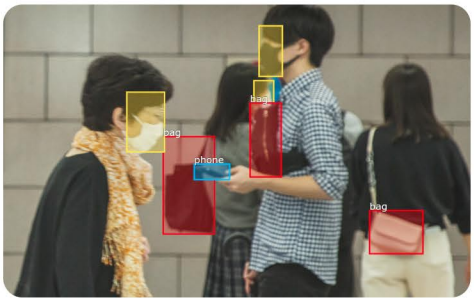
IMAGE ANNOTATION TYPES AND TECHNIQUES:

Image classification:

This form of annotation trains your model to recognize the presence of similar objects based on similar collections of objects that it's seen before. For example, a data annotator using image classification could tag a kitchen scene as "kitchen."

Object detection:

Otherwise known as object recognition, this type of image annotation detects the presence, location, and number of certain objects in an image. For example, a street scene can be separately annotated with bikes, pedestrians, vehicles, and other objects.



Segmentation:

There are two main types of image segmentation. Semantic segmentation outlines the boundaries between similar objects (e.g., stadium vs. crowd) while instance segmentation labeling marks the occurrence of every individual object within an object class (e.g., every person in the crowd).

In addition to tools, there are a variety of image annotation techniques. Here are just a few of the most commonly used methods:

Bounding box labeling:

Annotators draw a box around target objects.

Landmarking:

Characteristics (such as facial features) within the image are "plotted."

Polygon labeling:

Irregular objects are annotated by their edges.

WHAT DO I NEED TO GET STARTED?

The right image annotation tool can help get the job done faster and with fewer errors using automatic image labeling. These are available on today's market as open source or freeware image labeling tools.

Without the right tools, techniques, or workforce, you compromise on quality, precision, and the time it takes to get to market. That's why AI companies often rely on professional data annotation services to label datasets for machine learning.

Professional Image Annotation Services:

Machine learning models are only as good as the data that is used to train them. Keymakr has the skills, equipment, and expertise necessary to deliver pixel-perfect results that align with your timeframe and budget.