

# Augmented and Virtual Reality

Bring AR/VR and AI together to deliver a totally immersive experience

Augmented Reality (AR) and Virtual Reality (VR) are two nascent areas of technology whose full potential are yet to be expanded into mainstream industries. While AR/VR and Artificial Intelligence (AI) are distinct areas, companies who combine AI with their AR/VR experiences will build better, fully immersive AR/VR products.

AI models can offer an easier and more scalable way to provide the inputs required to build seamless and impressive AR/ VR experiences. The most common way is by recognizing data inputs and triggering an effect within the AR/VR scene.



**See what happens when the power of AI is combined with AR/VR technology:**

## Uses of AI in Augmented Reality



**Image and Scene Labeling** – classify an image and trigger an AR label to be displayed



**Object Detection** – estimate the position and extent of objects within a scene. Location information is then used to form hit boxes and colliders that facilitate interactions between physical and digital objects



**Semantic Segmentation and Occlusion** – segment and occlude any objects specified



**Pose Estimation** – infer the position of objects like hands and fingers, which are used to control AR content



**Text Recognition and Translation** – detect, read, and translate text in an image. Augmented reality APIs are then used to overlay translated text back into the 3D world



**Audio Recognition** – recognize keywords and trigger AR effects

## Uses of AI in Virtual Reality



**Procedural Content Generation** – design characters, environment, other graphical objects at scale



**Embodied Interactions** – design more natural movement interaction systems



**Virtual Humans** – train animations to respond in real time



**Dynamic Customer Experiences paired with Virtual Assistants** – eg. Provide a virtual experience to try on the latest fashion with an assistant to answer any questions your customers may have

## Our complete data pipeline will collect and annotate the training data needed to bring your products to life:

### End to End Data Collection

As a global leader in our field, our clients benefit from our capability to quickly deliver large volumes of high-quality data across multiple data types, including image, video, speech, audio, and text for your specific AI program needs. With a global crowd of over 1 million contributors, we can ensure you have the diversity of data needed to create a world class model. Short on time and budget? Our off-the-shelf datasets are also available to jumpstart your AI projects.

### Verify Existing Annotations

Bring your own model and leverage our global crowd to help verify and correct existing annotations at scale. Or start from scratch using one of our models that we can provide to you.

### Data Annotation

Using the data we've collected or data that you have provided, we can use our industry leading data annotation platform to produce high-quality training data. Common annotation types for AR/VR include: Video Annotation for tracking gestures/ eye movements (eg. bounding boxes, keypoint annotation, ability to validate shapes within shapes), Image Classification, Semantic Segmentation and Audio Transcription.

### Use Our Crowd With Your Own Specific Tool

If you have a particular annotation tool you want to use but need scalable, human annotators, we can provide our high-quality crowd of contributors for you to use.

## Why Appen?



### Quality

We can ensure high-quality annotations through our stringent crowd levels, processes and tooling which already features several in-built quality control functions.



### Crowd Levels

We have a range of different crowd offerings based on the complexity of your tasks and to meet any security or privacy concerns including in-facility crowd workers.



### Scalability

With our global crowd of over 1 million contributors we truly deliver high-quality annotation at scale. This is especially true for our Computer Vision tasks where the crowd isn't limited by language requirements.



### Expertise

Our highly experienced Product team will recommend the best tools for your job and work in conjunction with great Project Managers to ensure your entire project runs smoothly.



### Augmented Reality, Virtual Reality and Artificial Intelligence

are separate but complementary technologies. With our high-quality training data, you will create the accurate AI models needed to provide a seamless and authentic AR/VR experience.