Emotion and Demographics Detection using Camera, through cloud

Today we have several different ML algorithms, frameworks, pre-built databases like ImageNet that have made computer vision solutions easy to apply, less time consuming and efficient. To further ease ML developers work, now there are frameworks and APIs available like:

1. Google’s Cloud Vision API

Cloud Vision allows developers to easily integrate vision detection features within applications, including image labelling, face and landmark detection, optical character recognition (OCR), and tagging of explicit content

1. Amazon’s AWS Rekognition

Amazon Rekognition is an image analysis service available in the Amazon AI suite. Through the Amazon Rekognition API, enterprises can enable their applications to detect and analyse scenes, objects, faces and other items within images.

1. Azure Computer Vision Service

Azure's Computer Vision service gives you access to advanced algorithms that process images and return information based on the visual features you're interested in.

1. Roboflow framework

Roboflow is a Computer Vision developer framework for better data collection to pre-processing, and model training techniques. Roboflow has public datasets readily available to users and has access for users to upload their own custom data also.

1. Clarify

Clarifai is another comparatively young company that provides Computer Vision as a service. Clarifai is solely working with CV having lots of different features available. Each specific task is solved by the corresponding model.

**Benefits of using Cloud Services:**

* Automate visual analysis tasks at scale:

With cloud computing, one can tackle tasks that cannot be performed manually such as analysing millions of images and videos within minutes. You can also increase workforce productivity and minimize errors by augmenting cumbersome, repetitive human visual review tasks with machine learning.

* Get started without ML expertise

With cloud computing, you can quickly add a wide range of pre-trained computer vision APIs to your applications within hours, without the need to collect data and build computer vision models from scratch. If you have unique requirements, you can use AutoML to automatically train & host custom ML models by uploading as few as ten labelled images.

* Reduce ML infrastructure costs

Cloud services have a fully managed service that can automatically scale up and down based on your business needs. You don’t need to build and manage your own ML infrastructure. You can quickly deliver reliable, scalable, and secure applications powered by computer vision and pay only for the images and videos that you analyse.

**Features of Cloud Services (related to the topic):**

* Face Detection and Detail:

Information about a face detected in a video analysis request and the time the face was detected in the video. It will also display the user’s age, gender etc.

* Emotion:

The emotions that appear to be expressed on the face, and the confidence level in the determination.

* They also have separate dedicated services for person details, gender, sunglasses and smile.

Cloud services have plenty more features for developers to work around.

**Benefits of cloud computing for business:**

* Cheaper and abundant storage and powerful computing devices:

Cloud Computing is a paradigm where instead of maintaining your own computing and storage servers, you can turn to a third-party provider to take care of your computing and storage needs.

* Faster Data Communication Technologies:

Cloud Computing enables combination of faster communication technologies, cheaper and more powerful storage and computing devices, and more robust operating software to coordinate with multiple computers.

**Future of ML and cloud computing:**

Everyday more and more enterprises are turning towards cloud computing for Machine learning projects. In the future, we may require storing and fetching zillions of data, and this could be possible and made easier with the help of Machine Learning. Also, machine learning provides data analysis and data access by enabling the cloud to be more flexible and scalable.

Cloud delivery and cloud computing models will help much to shape to use of AI use cases effectively. Moreover, edge computing which extends the cloud capabilities to on premise with low latency even offline capabilities will provide more use cases (i.e. video analytics) as organizations will have large amounts of data with processing capability on premise. And quantum computing will be expected to advance AI, especially in machine learning.

And with this I conclude that there is no misjudgement in considering cloud computing as the future of machine learning.