AWS Rekognition

AWS Rekognition is a cloud-based computer-vision service that has been around since 2016.

* Computer-vision is a field that works with machine-learning via digital images and videos.
* Applications which deal with how computers can be made to gain a high-level understanding.
* Computer-vision includes methods for:
  + Acquiring images/videos
  + Processing images/videos
  + Analyzing and understanding digital images
  + Extracting high-dimensional data from those images and videos

AWS Rekognition is available as a service on the AWS Console (which I will show), an API which can be called, and also via the AWS Command-Line Interface (CLI).

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It has a number of computer-vision capabilities, falling into two categories:

1. Pre-trained algorithms that operate on data collected by Amazon
2. Algorithms that users can train on a custom dataset

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Pre-trained algorithms:

1. Object and scene detection
2. Celebrity Recognition (just what it sounds like)
3. Facial attribute detection; identifies attributes such as:
   1. Gender
   2. Age-range
   3. Emotions
   4. Facial features (facial hair, glasses, etc.)
4. People pathing
   1. Done using a video; example is sports players in a game video
5. Text detection (again, just what it sounds like)
6. Image moderation, or unsafe content detection

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User-trained algorithms using custom datasets:

1. Search Faces, using a database of images (think a personal family tree)
2. Face-based user verification: maybe unlock your front door?

Controversies?

1. Rekognition has been used by law-enforcement, with some controversy. The ACLU has gotten involved in several cases.
2. Also, some gender/race biases have been suggested, indicating that the software does better on male faces and is less reliable on dark-skinned females.

Worth noting that images/videos uploaded to the service need to be 5MB or smaller. Can be 15MB if on S3.

* Most high-resolution cameras (which is most new ones) have considerably larger file-sizes to capture more data.