

Image Features of Rekognition



Alan Jones

SOFTWARE DEVELOPER

www.ajones2k.com



Image Features



Object and scene detection



Facial Analysis



Facial recognition



Image Features



Image moderation



Celebrity identification



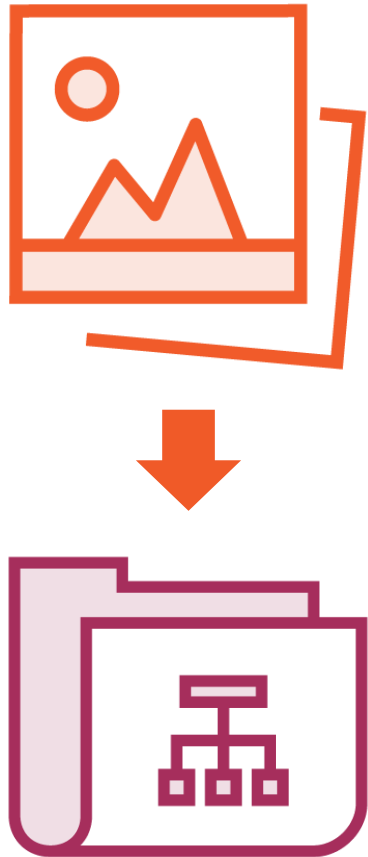
Facial comparison, text in image



Image Classification Application



Image Classification

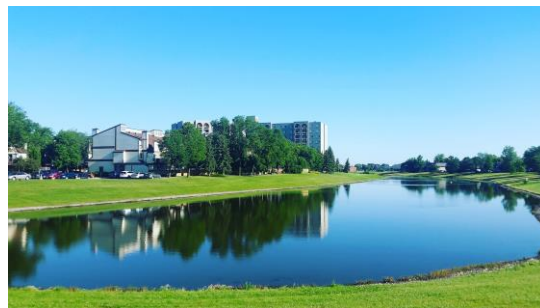


Images in S3 bucket

Process all image object with scene and object detection

Store detected labels in dictionary

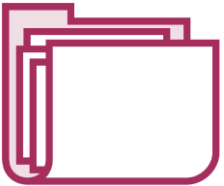
Display photo titles by subject



Building a Dictionary of Lists



Container where we can lookup by Name



Container that holds a list of objects



Examine each object in the list

Summary



Images stored in S3

Process using Rekognition

Data storage

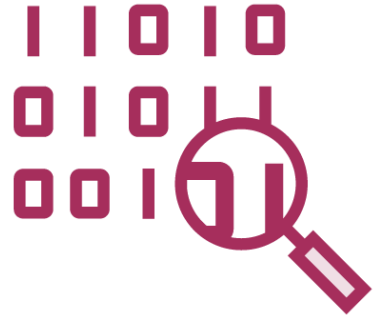
Data retrieval



Image Moderation with Java



Image Moderation



Detect obscene or suggestive content

Top-level (parent)

Secondary categories

Top Level
Category
Explicit Nudity

Nudity

Graphic Male Nudity

Graphic Female Nudity

Sexual Activity

Partial Nudity



Top Level
Category
Suggestive

Female Swimwear Or Underwear

Male Swimwear Or Underwear

Revealing Clothes



Java and AWS



Strongly typed language with industry support



Advanced features for library and component management



Complete AWS support libraries



Many of the AWS examples are in Java



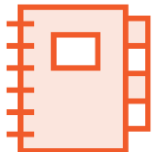
Building Java with Maven



Creates project structure and build environment



Automatically downloads required libraries



Provides complete project lifecycle support



Resource Files

installMaven.sh

createProj.sh

AwsSdkSample.java





Statue of David

Michelangelo

Produced around 1501



Summary



Java and Maven provide industry standard build environment

Utilize AWS class libraries and samples

Image moderation filter categories allows control of content detected



Facial Recognition



Two Step Process



Create a collection

Catalog of features and geometry

Images not needed after collection is created

One image can contain multiple faces

Use ExternalImageId for naming

Two Step Process

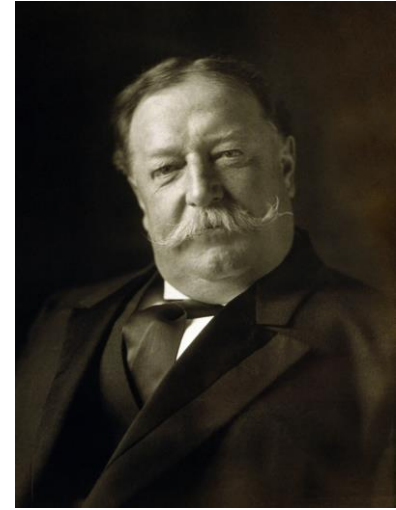
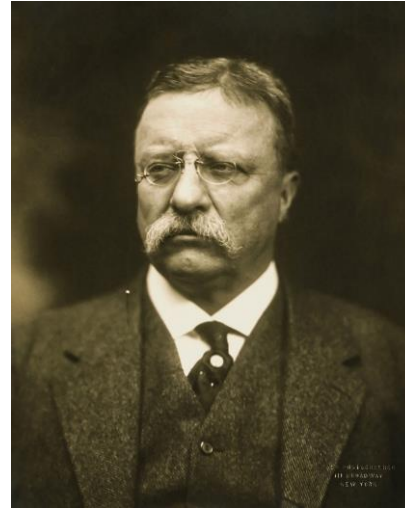
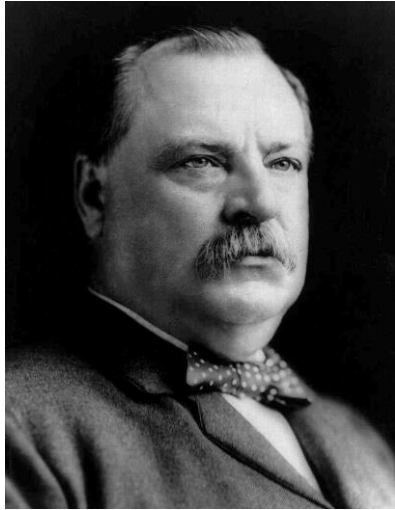
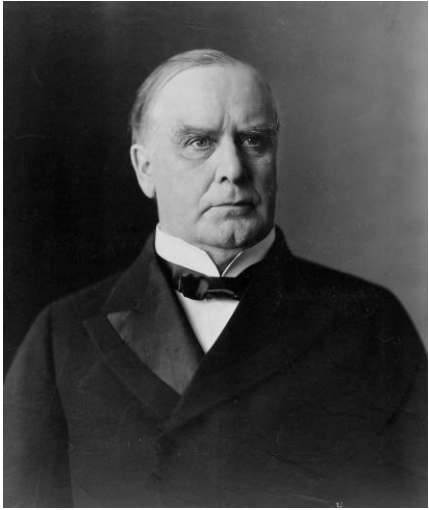


Analyze facial geometry

Compare to collection

Image can contain multiple faces

Hall of Presidents



Summary



Two Step Process

Images not needed once the collection is created



Celebrity Identification





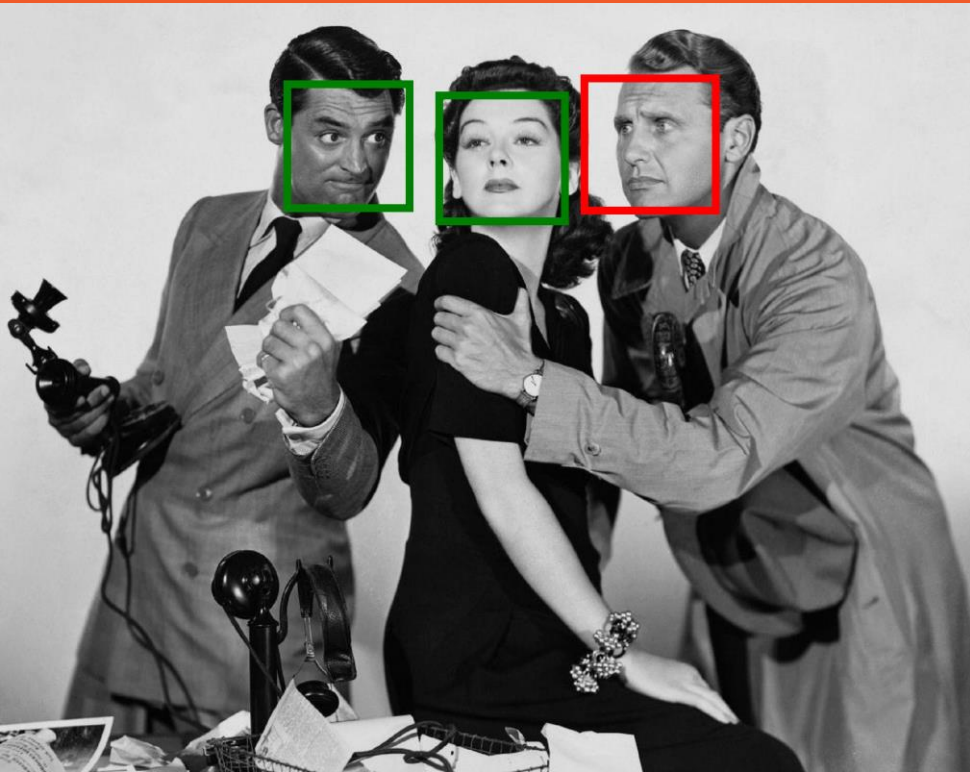
Promotion Picture for “His Girl Friday”

Cary Grant

Rosalind Russell

Ralph Bellamy





Create modified image with celebrity and unrecognized face rectangles

Analyze image

Copy image from S3

Save modified image

Copy modified image back to S3

```

{
  "CelebrityFaces": [
    {
      "Urls": [
        "www.imdb.com/name/nm0751426"
      ],
      "Name": "Rosalind Russell",
      "Id": "3vT1wn0p",
      "Face": {
        "BoundingBox": {
          "Width": 0.13625000417232513,
          "Height": 0.1732909381389618,
          "Left": 0.44749999046325684,
          "Top": 0.11526232212781906
        },
        "Confidence": 99.9487075805664,
        "Landmarks": [
          {
            "Type": "eyeLeft",
            "X": 0.4900859594345093,
            "Y": 0.18241865932941437
          },
          {
            "Type": "eyeRight",
            "X": 0.5398870706558228,
            "Y": 0.180240198969841
          },
          . . .
        ]
      }
    }
  ]
}

```

- ◀ “[“ start of an array
- ◀ Array of URLs for celebrity
- ◀ Name of celebrity
- ◀ Location of face in image
- ◀ Facial geometry information



Summary



Identify pop culture, political and historical figures

Modified image with information from the analysis

