Package 'facerec'

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Type Package

Title An Interface for Face Recognition

Version 0.1.0

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URL https://github.com/methodds/facerec

BugReports https://github.com/methodds/facerec/issues

Description Provides an interface to the 'Kairos' Face Recognition API <https://kairos.com/face-recognition-api>. The API detects faces in images and returns estimates for demographics like gender, ethnicity and age.

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Encoding UTF-8

LazyData true

RoxygenNote 6.0.1

Imports magrittr (>= 1.5.0), dplyr (>= 0.7.0), httr (>= 1.3.0), jsonlite (>= 1.5.0), knitr (>= 1.2.0), stringr (>= 1.2.0), snakecase (>= 0.9.0), rlang

Suggests magick (>= 1.9.0), ggplot2 (>= 2.2.0), purrr (>= 0.2.0), rmarkdown (>= 1.9.0)

VignetteBuilder knitr

NeedsCompilation no

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detect   *detect faces*

Description

Detect faces in an input image and return annotations from the 'Kairos' API.

Usage

```
detect(image, min_head_scale = 0.015)
```

Arguments

image   An image of file type 'JPG', 'PNG', or 'BMP'. Can either be an url string or a
                local image processed with `prep_image`.

min_head_scale Set the ratio of the smallest face to look for in the input image. Accepts a value
                between .015 (1:64 scale) and .5 (1:2 scale).

Value

A data frame with annotations for each detected face.

Examples

```
facerec_init()

# one image
finn_image <- 'https://upload.wikimedia.org/wikipedia/en/2/2a/Finn-Force_Awakens_%282015%29.png'
faces <- detect(image = finn_image)

# multiple images
sw_image <- 'https://upload.wikimedia.org/wikipedia/en/8/82/Leiadeathstar.jpg'
padme_image <- 'https://upload.wikimedia.org/wikipedia/en/e/ee/Amidala.png'

faces <- c(finn_image, sw_image, padme_image) %>%
```

```
purrr::map(detect) %>% dplyr::bind_rows()
```

---

enroll   *enroll faces*

Description

Enroll face in an input image to a gallery and assign a subject id.

Usage

```
enroll(image, subject_id, gallery, min_head_scale = 0.015)
```

Arguments

image	An image of file type 'JPG', 'PNG', or 'BMP'. Can either be an url string or a local image processed with `prep_image`.
subject_id	A string containing the id to assign for the person in the enrolled image.
gallery	A string containing the name of the gallery in which the image will be enrolled.
min_head_scale	Set the ratio of the smallest face to look for in the input image. Accepts a value between .015 (1:64 scale) and .5 (1:2 scale).

Value

A data frame with annotations for the enrolled image.

Examples

```
facerec_init()

finn_image <- 'https://upload.wikimedia.org/wikipedia/en/2/2a/Finn-Force_Awakens_%282015%29.png'
finn_enroll <- enroll(image = finn_image, subject_id = 'finn', gallery = 'starwars')
```

`facerec_init` *authorization*

Description

Initializes the authorization credentials for the 'Kairos' Face Recognition API. Needs to be called before using any other functions of `facerec` and requires `kairos_id` and `kairos_key` as environment variables.

Usage

```
facerec_init()
```

Value

nothing.

Examples

```
## Not run:
Sys.setenv(kairos_id = "Your Kairos API id")
Sys.setenv(kairos_key = "Your Kairos API key")

facerec_init()

## End(Not run)
```

`get_galleries` *list galleries*

Description

Returns identifiers for all galleries associated with a 'Kairos' application.

Usage

```
get_galleries()
```

Value

A vector of gallery id's.

Examples

```
facerec_init()

# enroll
finn_image <- 'https://upload.wikimedia.org/wikipedia/en/2/2a/Finn-Force_Awakens_%282015%29.png'
first_gallery <- enroll(image = finn_image, subject_id = 'finn', gallery = 'starwars')
second_gallery <- enroll(image = finn_image, subject_id = 'finn', gallery = 'more_starwars')

# get_galleries
get_galleries()
```

---

get_gallery_subjects   *get gallery subjects*

Description

Returns all subject id's associated with a gallery.

Usage

```
get_gallery_subjects(gallery)
```

Arguments

gallery   The gallery in which the subjects are enrolled.

Value

A vector of subject id's

Examples

```
facerec_init()

# enroll
finn_image <- 'https://upload.wikimedia.org/wikipedia/en/2/2a/Finn-Force_Awakens_%282015%29.png'
finn_enroll <- enroll(image = finn_image, subject_id = 'finn', gallery = 'starwars')

# view subjects
get_gallery_subjects(gallery = 'starwars')
```

---

prep_image   *prepare local image*

Description

Prepares a local image for an upload the 'Kairos' API via detect, enroll, recognize and verify.

Usage

```
prep_image(img_file)
```

Arguments

img_file   Path to an image of file type 'JPG', 'PNG', or 'BMP'.

Value

The prepared image object.

Examples

```
facerec_init()

# download example image
finn_image <- 'https://upload.wikimedia.org/wikipedia/en/2/2a/Finn-Force_Awakens_%282015%29.png'
temp_img_path <- tempfile(fileext = '.png')
download.file(finn_image, temp_img_path, mode = 'wb', quiet = TRUE)

# prepare image
finn_local <- prep_image(temp_img_path)

# use prepared image
faces <- detect(image = finn_local)
```

---

recognize   *recognize face*

Description

Recognize faces in an image and return the most likely matches from a gallery.

Usage

```
recognize(image, gallery, min_head_scale = 0.015, threshold = 0.6,
  max_num_results = 10, show_candidate_images = TRUE)
```

Arguments

image	An image of file type JPG, PNG, or BMP. Can either be an url string or a local image processed with `prep_image`.
gallery	A string containing the name of the gallery in which the image will be enrolled.
min_head_scale	Set the ratio of the smallest face to look for in the input image. Accepts a value between .015 (1:64 scale) and .5 (1:2 scale).
threshold	Likelihood (between 0 and 1) used to determine a valid facial match. Defaults to 0.6.
max_num_results	
	The maximum number of potential matches that are returned. Defaults to 10.
show_candidate_images	
	Whether to return temporary URLs for each potential match. Defaults to TRUE.

Value

A dataframe with the potential matches for the input image. The likelihood of matches is given in column `confidence`.

Examples

```
facerec_init()

# enroll
finn_image <- 'https://upload.wikimedia.org/wikipedia/en/2/2a/Finn-Force_Awakens_%282015%29.png'
padme_image <- 'https://upload.wikimedia.org/wikipedia/en/e/ee/Amidala.png'
finn_face <- enroll(image = finn_image, subject_id = 'finn', gallery = 'starwars')
padme_face <- enroll(image = padme_image, subject_id = 'padme', gallery = 'starwars')

# recognize
finn_2 <- 'https://upload.wikimedia.org/wikipedia/commons/b/b6/John_Boyega_by_Gage_Skidmore.jpg'
finn_rec <- recognize(image = finn_2, gallery = 'starwars')
```

---

remove_gallery   *remove gallery*

Description

Removes a gallery and all included subjects.

Usage

```
remove_gallery(gallery)
```

Arguments

gallery   The name of the gallery to be removed.

Value

nothing.

Examples

```
facerec_init()

# enroll
finn_image <- 'https://upload.wikimedia.org/wikipedia/en/2/2a/Finn-Force_Awakens_%282015%29.png'
finn_enroll <- enroll(image = finn_image, subject_id = 'finn', gallery = 'starwars')

# remove gallery
remove_gallery(gallery = 'starwars')
```

---

remove_subject   *remove subject*

Description

Removes a subject from a gallery.

Usage

```
remove_subject(subject_id, gallery)
```

Arguments

subject_id   The subject id for the subject to be removed.

gallery   The name of the gallery in which the subject is enrolled.

Value

nothing.

Examples

```
facerec_init()

# enroll
finn_image <- 'https://upload.wikimedia.org/wikipedia/en/2/2a/Finn-Force_Awakens_%282015%29.png'
finn_enroll <- enroll(image = finn_image, subject_id = 'finn', gallery = 'starwars')

# remove subject
remove_subject(subject_id = 'finn', gallery = 'starwars')
```

---

verify   *verify face*

Description

Verify whether face in an input image belongs to a subject in a gallery.

Usage

```
verify(image, subject_id, gallery)
```

Arguments

image	An image of file type 'JPG', 'PNG', or 'BMP'. Can either be an url string or a local image processed with [prep_image](#).
subject_id	A string containing the id for the person in the gallery to be verified.
gallery	A string containing the name of the gallery in which the subject will be verified.

Value

A data frame with the verification annotations for the input image. The likelihood of a match is given in column confidence.

Examples

```
facerec_init()

# enroll
padme_image <- 'https://upload.wikimedia.org/wikipedia/en/e/ee/Amidala.png'
padme_face <- enroll(image = padme_image, subject_id = 'padme', gallery = 'starwars')
```

```
# verify
amidala_img <- 'https://upload.wikimedia.org/wikipedia/it/5/5e/Padm%C3%A9_Amidala.png'
verified <- verify(image = amidala_img, subject_id = 'padme', gallery = 'starwars')
```

---

view_subject   *view subject*

Description

Returns all face id's for each image enrolled for a given subject in a gallery.

Usage

```
view_subject(subject_id, gallery)
```

Arguments

subject_id	The subject id for which to return all face id's.
gallery	The gallery in which the subject is enrolled.

Value

A dataframe with face id's and enrollment timestamps associated with the input subject.

Examples

```
facerec_init()

# enroll
finn_image <- 'https://upload.wikimedia.org/wikipedia/en/2/2a/Finn-Force_Awakens_%282015%29.png'
finn_enroll <- enroll(image = finn_image, subject_id = 'finn', gallery = 'starwars')

# view subject
view_subject(subject_id = 'finn', gallery = 'starwars')
```

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