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Release Notes

MorphoFace Version 2.0.1

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Introduction

MorphoFace Version 2.0.1 advances our current face recognition and capture capabilities and introduces many new features including multi-face capture, duplicate detection and anti-spoofing detection (BETA), and provides greater customization of the capture sequence and passenger experience.

Using our latest face technology, you can now capture both single and multiple faces at unparalleled speeds. To avoid re-sending the same person for verification, the duplicate detection will check each captured image for uniqueness. With our built-in anti-spoofing feature, attempts to deceive our camera will be easily thwarted. We’ve also provided many customizations to allow administrators to configure how the capture sequence is performed as well as the overall look-and-feel of what the passenger will experience.

New Features

Capture Modes

Single Face Capture

Toggle the **Multi-face** button on the console to **OFF** to configure the camera to capture a single face. The camera will capture an image from the best face detected by the camera. You can also configure this mode using the **capture.mode** parameter.

Multi-Face Capture

Toggle the **Multi-face** button on the console to **ON** to configure the camera to capture multiple faces. All faces detected by the camera including single faces will be captured. You can also configure this mode using the **capture.mode** parameter.

Trigger Modes

Automatic Presence Detection

Set the **trigger.mode** parameter in the application configuration file to **PRESENCE** to have the camera initiate the capture sequence as soon as motion is detected. When the capture sequence is complete, the camera will go into a stand-by mode until motion is detected again.

Manual Button

Set the **trigger.mode** parameter in the application configuration file to **BUTTON** to display a **START CAPTURE** button on the console. The agent will use this button to initiate the capture sequence manually.

Identification Modes

Remote CBP Identification

The **match.mode** parameter in the application configuration file will be set to **REMOTE\_CBP** by default. With this setting, all checked images will be forwarded to a remote CBP TVS system for identification. Refer to the CBP configuration files in Appendix B for TVS-specific parameters.

Live Video Modes

Disable Live Video

Set the **capture.live.video** parameter in the application configuration file to **false** to disable any live video feedback from displaying on the camera while capturing.

Enable Live Video

Set the **capture.live.video** parameter in the application configuration file to **true.** Also set the **capture.live.video.mode** to **Enable** to display live video feedback on the camera while capturing. In this mode, the camera’s live view will be displayed to the passenger.

Enable Live Video with Face Tracking

Set the **capture.live.video** parameter in the application configuration file to **true.** Also set the **capture.live.video.mode** to **EnableWithEllipseOverlay** to display live video feedback on the camera while capturing. In this mode, the camera’s live view will be displayed to the passenger along with an ellipse for every face that is detected. The ellipses will be able to track and follow the passengers’ faces.

Enable Live Video Message

Set the **capture.live.video** parameter in the application configuration file to **true.** Also set a custom message for the **capture.live.video.message** parameter, for example *PLEASE LOOK HERE* or *PLEASE REMAIN STILL*. This message will be displayed on the camera in bold red text while the capture is being performed.

Duplicate Detection

To prevent multiple images of the same person from being sent for identification, an internal biometric check is performed on each captured image to ensure that only one image is forwarded per person. This check is enabled by default and is performed automatically on images before they reach the identification phase. Refer to the **enroll.dup.limit** parameter to configure the maximum duplicate check list size. You can also configure the **cleanup.files.expiration** to specify how long to keep the duplicate images before the cleanup service removes them.

Anti-Spoof Detection (BETA)

The anti-spoof feature is another internal biometric check that can distinguish between faces and 2-dimensional spoofing attempts (photographs, images on tablets, phones, etc.). Images that are identified as spoof attempts will be logged with “SPOOF” in the file names and will not be used for identification.

Updated Features

User Console Improvements

The console layout has been re-designed and new buttons have been added.

START CAPTURE Button

When **trigger.mode** is set to **BUTTON**, this large green button will be visible on the console and allow agents to initiate the image capture process.

Live Video Button

This button allows you to quickly toggle live video feedback **ON** or **OFF**. This action is the equivalent to manually setting the **capture.live.video** parameter to **true** or **false**, respectively.

Multi-face Button

This button allows you to quickly toggle between multi-face (**ON**) and single face (**OFF**). This action is equivalent to manually setting the **capture.mode** parameter to **MULTI\_FACE** or **FACE**, respectively.

Appendix A – Configuration Parameters

The application configuration file is located in ***D:\MorphoFace\conf\morphoface.properties***. Parameters marked with an exclamation sign (!) will require an application restart. Parameters marked with a plus sign (+) will require a restart of the camera display. An asterisk (\*) indicates the default value.

Parameter: enroll.dup.limit!

Values: A non-negative number (500\*)

Description: Sets the duplicate checklist limit. When the limit is reached, the oldest image will be deleted before a new image is added.

Parameter: cleanup.files.interval

Values: A non-negative number (5\*)

Description: Sets the frequency the file cleanup service runs in minutes.

Parameter: cleanup.files.expiration

Values: A non-negative number (10\*)

Description: Sets the file expiration age in minutes for the cleanup service to delete.

Parameter: capture.mode

Values: FACE, MULTI\_FACE\*

Description: Sets the camera capture mode to single face or multi-face.

Parameter: trigger.mode!

Values: BUTTON\*, PRESENCE

Description: Sets the camera trigger mode to manual (button) or automatic (motion) trigger.

Parameter: match.mode!

Values: REMOTE\_CBP\*

Description: Sets the identification method to use a remote CBP system.

Parameter: capture.timeout

Values: A non-negative number (10\*)

Description: Sets the camera capture timeout in seconds.

Parameter: capture.min\_attempts

Values: A non-negative number (50\*)

Description: Sets the minimum number of camera snapshot attempts in multi-face mode for capturing faces.

Parameter: capture.live.video

Values: true, false\*

Description: Toggles the camera live feedback video on or off. When off, a “Please Look Here” graphic will display on the camera.

Parameter: capture.live.video.mode+

Values: Enable\*, EnableWithEllipseOverlay

Description: Sets the camera to display live video feedback or live video feedback with

face tracking.

Parameter: capture.live.video.message+

Values: A descriptive message (empty\*)

Description: Displays a custom message to the passenger during image capture.

Parameter: capture.color.start

Values: A hexadecimal color code (#FFFFFF\* white)

Description: Sets the LED beacon color during the face capture process.

Parameter: match.color.start

Values: A hexadecimal color code (#FFA500\* yellow)

Description: Sets the LED beacon color during the face identification process.

Parameter: match.color.match\_high

Values: A hexadecimal color code (#008000\* green)

Description: Sets the LED beacon color after an identification match decision is complete.

Parameter: graphics.file.forward!

Values: An image filename (WaitHere.jpg\*)

Description: Sets the graphic file to display when the camera is in ready-to-capture mode.

Parameter: graphics.file.welcome!

Values: An image filename (WalkForward.jpg\*)

Description: Sets the graphic file to display when the capture and identification

processes have completed.

Parameter: audio.alert.enable

Values: true, false\*

Description: Enables an alert audio sound when in automatic mode and motion has been detected.

Parameter: audio.file.alert

Values: An audio filename (beep1.mp3\*)

Description: Sets the audio file to play when motion detection is triggered.

Appendix B – CBP Configuration Files

The following JSON configuration files in ***D:\MorphoFace\conf\*** can be used to configure the remote TVS system for identification and flight data. An application restart is needed for changes to become effective.

cbp-config.json

{

"url": "https://sat.tvs-cbp.com/api",

"username": "USERNAME",

"password": "PASSWORD",

"token": "",

"useProxy": "false",

"proxyHost": "",

"proxyPort": "0",

"proxyProtocol": "http",

"proxyUsername": "",

"proxyPassword": ""

}

url: The TVS system base URL

username: The username to authenticate with TVS

password: The password to authenticate with TVS

token: The token to use with TVS

useProxy: true, false

proxyHost: The proxy hostname

proxyPort: The proxy port number

proxyProtocol: http, https

proxyUsername : The username to authenticate with the proxy host

proxyPassword: The password to authenticate with the proxy host

cbp-flights.json

[

{

"carrierCode": "AA",

"flightNumber": "16071",

"departurePort": "ATL",

"departureDate": "20170626"

},

{

"carrierCode": "AA",

"flightNumber": "16072",

"departurePort": "ATL",

"departureDate": "20170626",

"selected": "true"

}

]

carrierCode: The airline carrier code

flightNumber: The flight number

departurePort: The departure port code

departureDate: The departure date (YYYYMMDD format)

selected: The currently selected flight data to use when sending captured images to

TVS for identification.