Automated Passenger Boarding Kiosk

Description:

We have the business requirements to automate the boarding kiosk pass validation using Azure cognitive services. This will hellp to speed up some of the pre-boarding steps. We are going to implement some compute vision techinolgies to do text extraction to validate the boarding pass and video and images validation to validate passenger identity.

Objectives:

* Validate passenger identify usuing a video from kiosk and id provide by passeger (driver license).
* Validate flight boarding pass
* Monitor boarding kiosk experince using the video from the kios to perfrom some sentimental analysis.
* Carry-on baggege clearance to validate that there is not prohibited items (Lighter detection).

Datesets:

ID - Driver Licence:

* First Name - [identity verification]
* Last Name – [identity verifcation]
* Date of Birth – [identity verification]
* Sex – [identity verification]
* Face photo – [identity verification]

Boarding Pass:

* First Name – [identity verification]
* Last Name – [identity verification]
* Date – [Flight verification]
* Flight number – [fligjt verification]
* Origing – [Fligh Verification]
* Destination – [Fluight verification]
* Seat – [Flight verification]

30 seconds video:

* Face image – [identity verification]
* Sentiment – [Boarding kiosk experience]
* Emotion – [Boarding kiosk experience]

Lighter Images – Carry-on clearance:

* Training lighter images – [lighter detector]
* Test carry-on images – [lighter detector]

Solution:

* Text extraction using Form Recognizer from the Driver License and Boarding Pass.
* Face extraction using Face API from Driver Licence and Video kiosk. Perform a authentication using the input data from these to sources.
* Object Detection using Custom Vision to identify Prohibit Items (Lighter). Build a model to identify lighter in the carry-on baggage.

Model Metrics:

* Model evaluations: Measure model performance using accuracy, precision and recall.
* Name validation: Extract personal data from ID and boarding pass
* Boarding pass validation: Extract data from boarding pass and match with ID
* Idenitity Validation: Extract face data from id and match with ID
* Carry-on baggage clearance: Identify lighter items in baggage photos.

Francisco Javier Medel Medina