#### **Automated Passenger Boarding Kiosk**

## **Description:**

In this project, we are going to build an automated passenger boarding kiosk using Azure cognitive services that will assist some of the pre-flights boarding procedures. Variety of different computer vision processes such as authentication and text extraction will be done in this kiosk with the help of azure cognitive services.

### Objectives:

- Identity validation using video from kiosk, id card and boarding pass information
- Flight validation using boarding pass
- Boarding kiosk experience using a video from kiosk
- Lighter detection in carry-on baggage using lighter images

#### <u>Dataset</u>:

- 30 seconds video from kiosk:
  - Face picture [for identity verification]
  - Sentiment [for Boarding kiosk experience]
  - Emotion [for Boarding kiosk experience]
- Boarding pass:
  - First Name [for identity verification]
  - Last Name [for identity verification]
  - Seat [for flight validation]
  - Date [for flight validation]
  - Flight No [for flight validation]
  - Origin [for flight validation]
  - Destination [for flight validation]
- Driving Licence ID card:
  - First Name [for identity verification]
  - Last Name [for identity verification]
  - Date of Birth [for identity verification]
  - Face picture [for identity verification]
  - Sex [for identity verification]
- Lighter Images:
  - Public lighter images [Lighter detection in carry-on baggage]
  - Test carry-on images [Lighter detection in carry-on baggage]

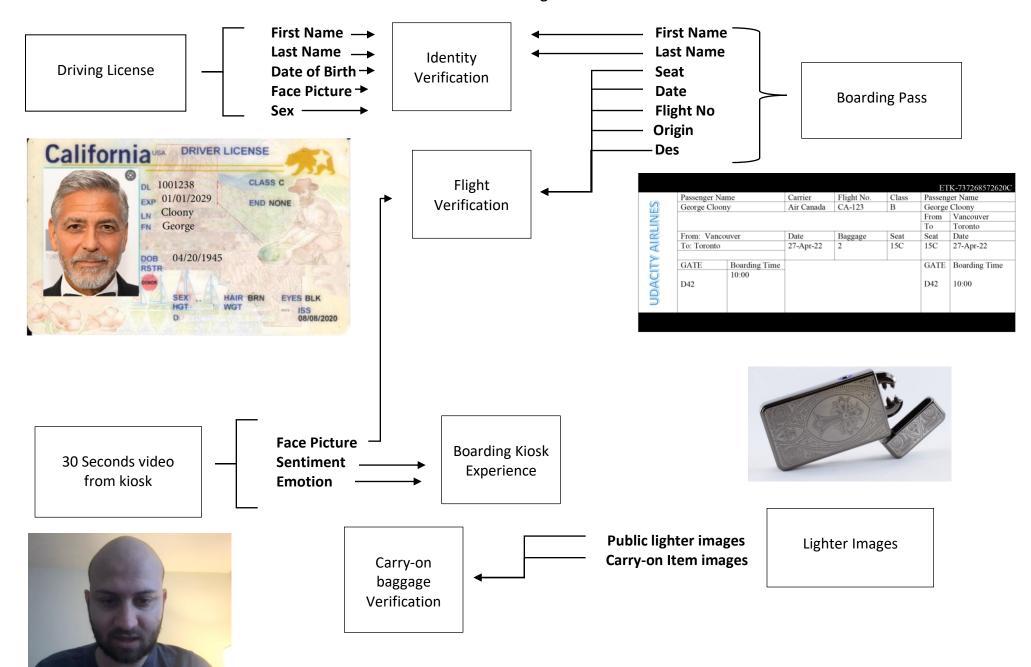
## Solution:

- I. Text Data Extraction -> Form Recognizer -> Boarding pass , Digital ID : Extract text within these two input data
- II. Face Data Extraction -> Face API -> Digital ID , Video from kiosk : Extract human face within these two input data for authentication purposes
- III. Object Detection -> Custom Vision -> Lighter images : Build a model to detect lighter in carry-on baggage

## Model metrics and evaluation:

- For model evaluation: different metrics such as recall, and precision will be calculated for models .
- For DOB validation: extracted document from digital ID & boarding pass
- For Person validation: picture extracted from 30 seconds video & digital ID
- For Name validation : extracted information form digital ID & boarding pass
- For carry on baggage validation : extracted picture from carry on baggage

# **Data Flow Diagram**



# **Architecture Diagram**

