Problem Definition and Solution Strategy Write-up

Description:

In this project, I will prototype an automated passenger boarding kiosk to assist with pre-flight boarding procedures. The automated system will showcase the power of computer vision in executing a wide variety of business processes within the context of airline boarding operations, specifically identity verification to board the flight and automated customer feedback collection. In this project, I will use Azure Computer Vision, Face, and Form Recognizer services, along with a few other cloud services such as Blob Storage.

Objectives:

- To validate passenger identity using video from kiosk, id card and boarding pass information
- To implement lighter detection in carry-on baggage using lighter images
- Understand passenger experience by extracting emotions and sentiments using a video from kiosk
- To implement flight validation using the boarding pass

Dataset:

- Boarding Pass
    - First Name
    - Last Name
    - Seat
    - Flight Number
    - Flight Date
    - Origin
    - Destination

- 30-sec Video from Kiosk
    - Face picture
    - Sentiment
    - Emotion

Azure Services Architecture Diagram

Driving License	→	Form recognizer	→	Extract required information for identity verification
Driving License	→	Face API	→	Detect human face for identity verification
Boarding Pass	→	Form recognizer	→	Extract required information for boarding verification
Lighter Image	→	Custom Vision	→	Build a model to detect lighter in carry-on baggage
Video Kiosk	→	Video Analyzer/Face API	→	Detect human faces and sentiment analysis from video