

Project Problem Description

Project Objective

The project objective is to create an airline kiosk that utilizes artificial intelligence (AI) to automate many processes for the passenger to board without human intervention.

First users will scan their ID and boarding pass which will help verify the documents match. Additionally, this step will verify that the user boarding matches the image on their ID card. Once the member has been verified the kiosk will scan carry-on baggage to determine if the member is bringing any prohibited items. After the member has passed all these requirements the member will be automatically approved for boarding, otherwise manual intervention with a crew member will occur to remedy anything that was flagged during the boarding process.

In order for the kiosk to work as intended a passenger manifest will be created in advance with the information that was submitted when reserving a seat on the flight. This manifest will be used as the source of truth to compare the user provided ID and boarding passes. There will also be a live video scan of the member submitting these documents to confirm the real person submitting these documents matches their ID. Lastly, the carry-on equipment will be scanned and image recognition will check if there is a lighter present before boarding. For the purposes of this project these steps will be simulated and the data will be produced beforehand before being processed using Azure services.

Input Data Sources

- Flight Manifest List for all users
- User ID card
- User boarding pass
- User face video
- User carry-on items photo

The Solution Strategy

To compare a member's ID and boarding pass to the flight manifest, the Azure form recognizer will be used to train two separate models to extract information from these documents. This extracted information will be compared to the information on the flight manifest to guarantee that the user is expected on the flight. After the document validation Azure video indexer service will be used to match the user to their ID card to

confirm the human matches the data. Lastly, Azure custom vision services will use the scanned carry-on image to perform lighter identification. If the user passes all of these checks then a successful validation message will be passed and the member will be allowed on board the airplane.