Alpha Presentation

United Airlines Training Forecast Model

The Capstone Experience

Team United Airlines Training

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Spring 2022
Project Overview

• The project analyzes the risk of becoming understaffed on airworthy technicians at various United Airline hubs.

• Each station has detailed analysis, providing information at a deep granularity, allowing specifications by day, shift, technician type and plane type.

• There is also a graphical forecast page to look over time in a more visual way.
System Architecture

- **Azure SQL Database**
  - Structured input data
  - Analysis results

- **Azure Blob Storage**
  - Text-format data

- **Azure Functions (w/ Python)**
  - Data ingest
  - Periodic analysis
  - On-demand analysis
  - Serves APIs for client

- **Azure Static Web Apps**
  - User authn/authz with Azure AD integration
  - Routes API traffic to Functions
  - Serves static content

- **React + TypeScript**
  - Frontend client
  - Display analysis results and insights to users
Forecast Dashboard

New York/Newark Liberty International Airport (EWR)
- Everything Looks Good!

Washington Dulles International Airport (IAD)
- There may be an issue:

Houston George Bush Intercontinental Airport (IAH)
- There is a major problem!

Chicago O'Hare International Airport (ORD)
- Everything Looks Good!
Stations Page - Good
Stations Page - Bad
Predictions Page
What’s left to do?

• Machine Learning needs to become more robust and complete across additional areas
• The filters on each page need to become implemented with what is ultimately displayed
• The graph on the predictions page needs additional refinements in filtering and appearance
• Add page to help with data ingest flow when client has additional data
Questions?