From Students…
…to Professionals

Beta Presentation
United Airlines Training Forecast Model

The Capstone Experience
Team United Airlines Training

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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

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The Capstone Experience
Dashboard Page

New York/Newark Liberty International Airport (EWR)
- Undertrained at BID 101, shift swing, fleet 737MAX.

Washington Dulles International Airport (IAD)
- Undertrained at BID 101, shift swing, fleet 737NG.

Houston George Bush Intercontinental Airport (IAH)
- Undertrained at BID 102, shift swing, fleet Airbus.

Chicago O’Hare International Airport (ORD)
- Undertrained at BID 101, shift swing, fleet 737NG.
Stations Page
Stations Page

Currently at Station IAD:

Undertrained at BIO 101, shift swing, fleet 737NG.

32%
Predictions Page

[Image: United Training Forecast Model interface with a bar chart showing technician need over time from January 2021 to September 2022.]
What’s left to do?

- **Features**
  - All major features complete

- **Stretch Goals**
  - More flexible file upload system
  - PDF station overview document
  - Distinguish prediction data from actual data

- **Other Tasks**
  - Improve model performance
  - UI/UX cleanup
  - Preparing to hand off project to sponsor
  - Ensure code is properly documented
Questions?