

**MICHIGAN STATE**  

---

**UNIVERSITY**

# Beta Presentation

# Audit Automation Tool

The Capstone Experience

United Airlines Quality Assurance

Shafkat Kabir

Haoyun Wu

Emily Goldwater

Adam Collier

Tejas Singhal

Department of Computer Science and Engineering

Michigan State University

Fall 2023



*From Students...*  
*...to Professionals*

# Project Overview

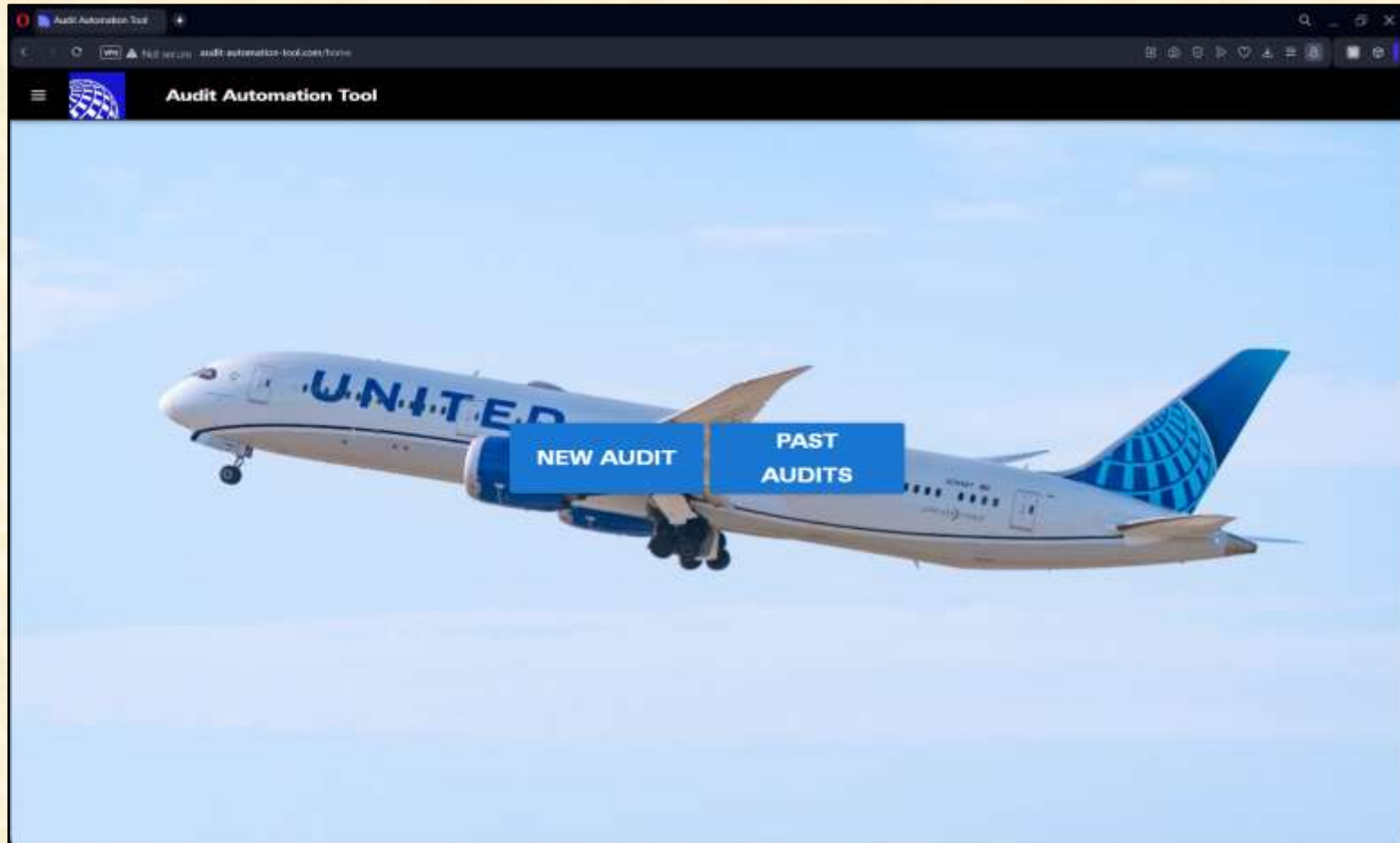
- Leverage AI to make auditing process automated for United Airlines, one of America's foremost airlines
- By creating a web application to compare FAA and United Airlines regulations to vendor servicing manuals
- Showcase missing standards not found in the vendor manuals to streamline auditing process – reducing manpower required for auditing as well as the elongated auditing process time – bringing capacity back to the team



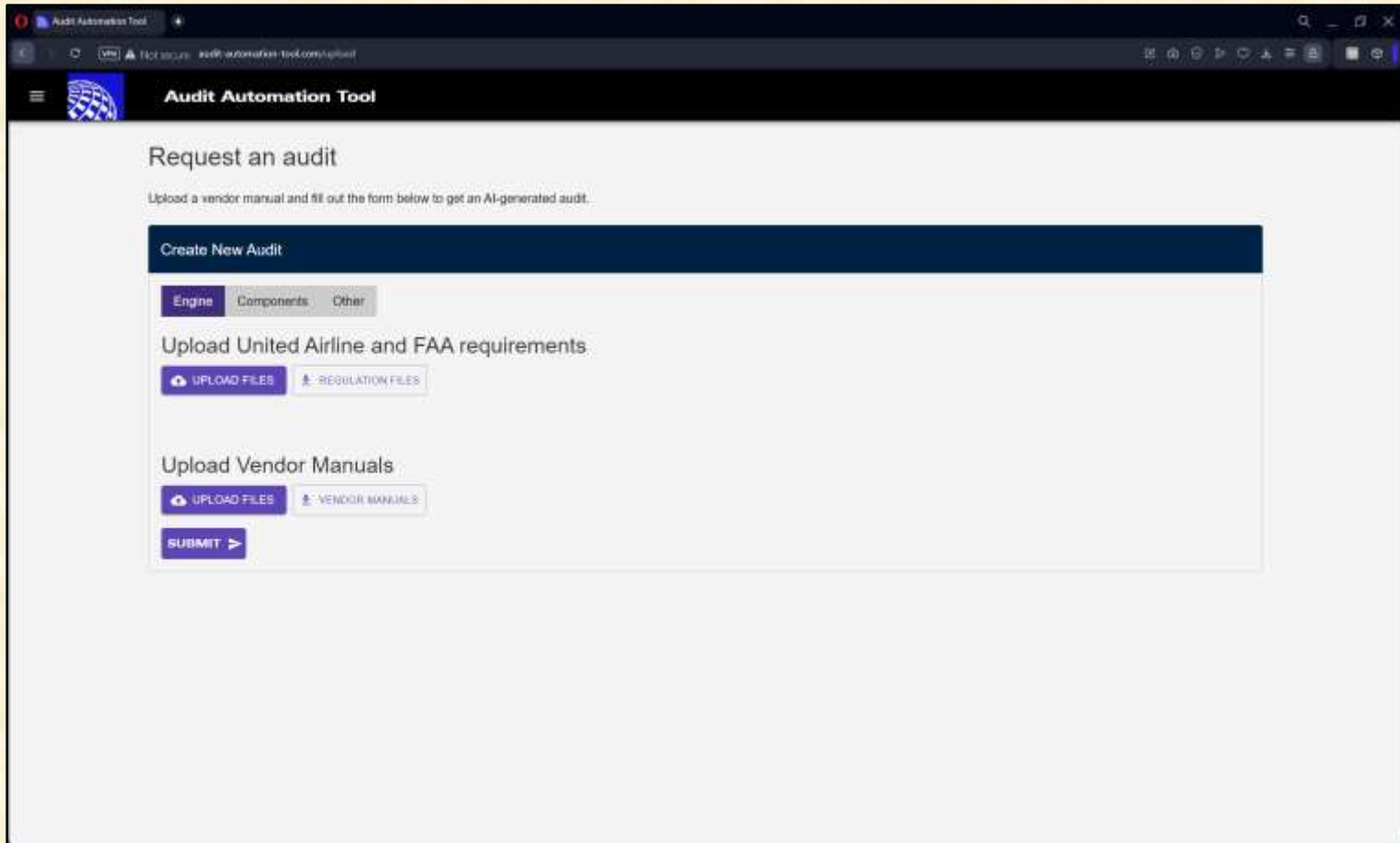
# System Architecture



# Home Page



# Upload Page



# Results Page

**Result of your Audit:**

**UNITED**

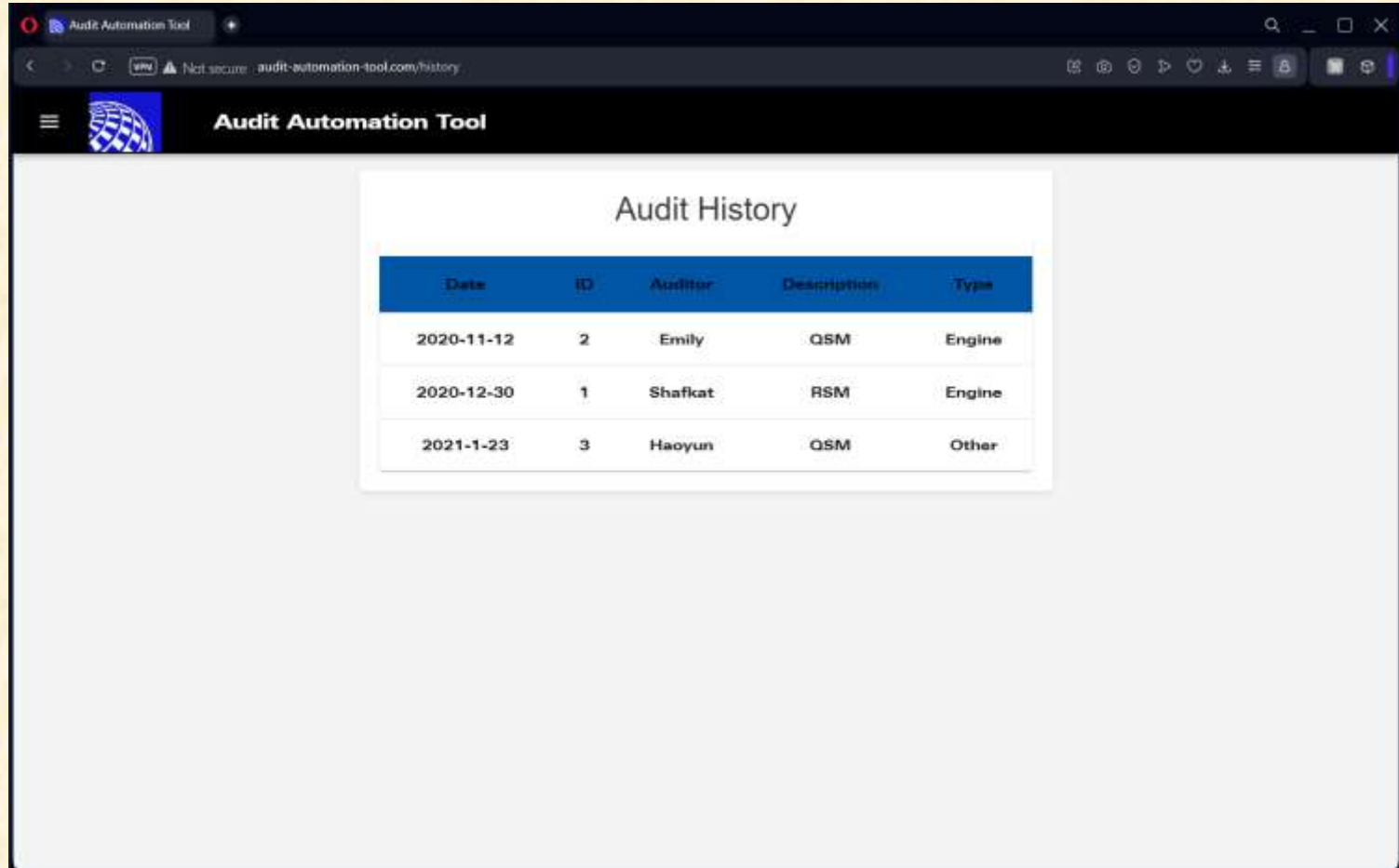
**Q.A. POLICY & PROCEDURES  
QUALITY AUDIT DEPARTMENT**

1. Policy / Certifications (\*\*\*\*\*Record the observed contributing Human Factors at time of finding\*\*\*\*\*[HF1] Lack of Communication (HF2) Complacency (HF3) Lack of Knowledge (HF4) Distractions (HF5) Lack of Teamwork (HF6) Fatigue (HF7) Lack of Resources(HF8) Pressure (HF9) Lack of Assertiveness (HF10) Stress (HF11) Lack of Awareness(HF12) Norms )

QUESTION	YES/NO/NA
1. Obtain and review a copy of the current FAA Air Agency, or Transport Canada AMO certificate, and Operations Specifications (if applicable). Are they accurate? [49 CFR 195.206(e)] [145.1] [2A]	The information provided in the context does not allow for a conclusion to be made about whether the TOCA is not a good source of information.
2. If the repair station has "Limited Ratings," does the vendor have a capabilities listing that satisfies the standard (Housing, Facility, Tool & Test, Material, Equipment, Tech Data, Processes, & trained Personnel)? "Obtain" [145.81] [145.210] [2C]	Yes.
3. Does the vendor only perform work authorized on its Operations Specifications? [2A]	No.
4. Does the vendor have an FAA approved and active	



# History Page



The screenshot displays the 'Audit History' page of the 'Audit Automation Tool'. The page features a table with the following data:

Date	ID	Auditor	Description	Type
2020-11-12	2	Emily	QSM	Engine
2020-12-30	1	Shafkat	RSM	Engine
2021-1-23	3	Haoyun	QSM	Other





# What's left to do?

---

- Features
- Stretch Goals
  - Intermediary page
  - Chatbot
- Other Tasks
  - Improve accuracy
  - Improve efficiency





# Questions?

---

?

?

?

?

?

?

?

?

?

