

tum-makeathon- thought process

June 22, 2025

1 Presentation

1.1 The Applicant Part

Since this website is public, we start with a short warning message. The applicant is then welcomed by a chat-bot, which asks what type of visa is needed.

Next, the applicant provides basic personal details: name, destination, nationality, length and purpose of stay. All previous answers are shown for review and correction if needed.

The applicant then creates a password, ensuring only they can access and modify their application.

The qr code you see will be used at the end of the process once he uploads all of his documents. With the link and password, the applicant can track their application status and see which documents are still required.

But now the applicant should upload some more files. Documents are grouped into clear categories for easier handling—for both the applicant and the reviewing officer.

After uploading everything, the applicant visits an embassy terminal to give fingerprints, pay the visa fee, and scan their QR code to authenticate. Documents can also be scanned at the terminal, useful for those without internet access.

1.2 The Bureaucrat Part

The main emphasis and innovation of our project lies in how we support the decision-making process for bureaucrats and provide useful statistics.

We have two roles for bureaucrats: the Senior Officer and the Officer. The Senior Officer can view statistics on potential biases on some attributes and make reviews on rejections, check if they are justified. These bias insights are generated by analyzing statistical importance of applicant attributes like age, nationality and education, offering valuable feedback to the foreign office.

This is the main review page. Officers can easily access each document category and see AI-generated summaries. We used large language models (LLMs) to create these summaries and insights, demonstrating that current AI technology is mature enough for this task. Importantly, the AI does not make

decisions—it simply organizes and presents the data, making the review process faster and more transparent for the officer.

We will send a questionnaire to bureaucrats for their rejection criteria and how they would like their summaries, to make our ai as useful as possible.

2 idea Applicant Side

The Process starts by registering or logging in to the visa website. First step involves answering basic questions about the visa application type and providing personal information. In the next step, the applicant uploads the required documents. Upon submission, the applicant receives a QR code that links to their application, which is protected by a password. The applicant then visits the embassy with the QR code. They use the terminal to scan his fingerprint, take a photo and pay the fee. Finally, they scan the QR code to retrieve their application and enter their password for verification.

2.1 Improvements

Client will be sure which documents are necessary for his application Client won't have to communicate with third parties for the application which was the case in e.g. Turkey

3 idea Bureaucrat Side

The bureaucrat logs into their account from a government computer. There, they can view the applications assigned to them, along with their respective types. Upon opening an application, the bureaucrat sees an AI-generated summary and all documents uploaded by the applicant. They can then choose to approve or reject the application.

3.1 Improvements

They can see how many and which type of applications they have to process. AI summarization gives key insights that may speed up the process. Reducing costs for the Foreign Office

4 idea AI

AI verifies the authenticity of the documents, using qr codes or comparing with examples of legit documents (not belonging to a real person) AI creates a summary of the key insights of the applications from the documents It offers these solutions to the bureaucrats, doesn't make decisions or change context

4.1 Testing the AI

The Applications that are rejected by the bureaucrats consciously or unconsciously influenced by the summaries will be stored. Some of those applications will be sampled randomly and be reviewed by other bureaucrats. They will decide if it should have been accepted or not (We assume that the bureaucrats share the same reasoning for evaluation and are deterministic). The applications that should have been accepted but weren't will be analyzed unanimously over racial, financial or educational backgrounds for possible AI Bias in creating summaries.

4.2 Creating the AI

The bureaucrats will be sent a questionnaire regarding their criteria for visa rejection and their preferences for how the summary should be written, including what information it should contain. The AI will be created considering these recommendations to provide utility to the bureaucrats.