**VISA APPROVAL PREDICTION**

### **About**

The Immigration and Nationality Act (INA) of the US permits foreign workers to come to the United States to work on either a temporary or permanent basis. The act also protects US workers against adverse impacts on working place and maintain requirements when they hire foreign workers to fill workforce shortages. The immigration programs are administered by the Office of Foreign Labor Certification (OFLC).

**Life cycle of Machine learning Project**

* Understanding the Problem Statement
* Data Collection
* Exploratory data analysis
* Data Cleaning
* Data Pre-Processing
* Model Training
* Choose best model

**Project Overview**

1. Understanding the Problem Statement
2. Understanding the Data set
3. Understanding the solution
4. Code understanding and walkthrough
5. Understanding the Deployment

## ****Relevance of the Project****

The project US visa approval is relevant as it highlights the acceptance rates for various visa categories, emphasizing the success rates for cultural exchange programs and family unity. Additionally, it sheds light on the scrutiny and approval rates for transit and crewmember visas, showcasing the importance of specialized visas like C1/D visas. The data presented underscores the positive stance towards international relations and the facilitation of global commerce through visa issuance. Overall, the information provides valuable insights into the acceptance rates and processes involved in obtaining different types of US visas

1. **Problem statement.**

OFLC gives job certification applications for employers seeking to bring foreign workers into the United States and grants certifications. As In last year the count of employees were huge so OFLC needs Machine learning models to shortlist visa applicants based on their previous data.

**In this project we are going to use the data given to build a Classification model:**

* This model is to check if Visa get approved or not based on the given dataset.
* This can be used to Recommend a suitable profile for the applicants for whom the visa should be certified or denied based on the certain criteria which influences the decision.

**Objective**

US Visa Approval status

Given certain features such a continent , education , job\_experience , training , employment , current age etc we have to predict whether the application for the visa will be approved or not

1. **Understanding the dataset**
2. Continent: Asia, Africa, North America, Europe, South America, Oceania
3. Education: High School, Master's Degree, Bachelor's, Doctorate
4. Job Experience: Yes, No
5. Required training: Yes, No
6. Number of employees: 15000 to 40000
7. Region of employment: West, Northeast, South, Midwest, Island
8. Prevailing wage: 700to 70000
9. Contract Tenure: Hour, Year, Week, Month
10. Full time Yes, No
11. Age of company: 15 to 180
12. **Solution**

This can be used on real life by US Visa applicants so that they can improve their Resume and criteria for the approval process.

1. **Solution approach**
2. Machine learning: ML classification Algorithms
3. Deep Learning: Custom ANN with sigmoid activation Function

**Here we are going to take the first approach using ML Algorithm**

1. **Solution Proposed**
2. Load the data from DB
3. Perform EDA and feature engineering to select the desirable features.
4. Fit the ML classification Algorithm and find out which one performs better.
5. Select top few and tune hyperparameters.
6. Select the best model based on desired metrics
7. **Deployment:**
8. Docker
9. Cloud services
10. Adding self hosted runner
11. Workflows