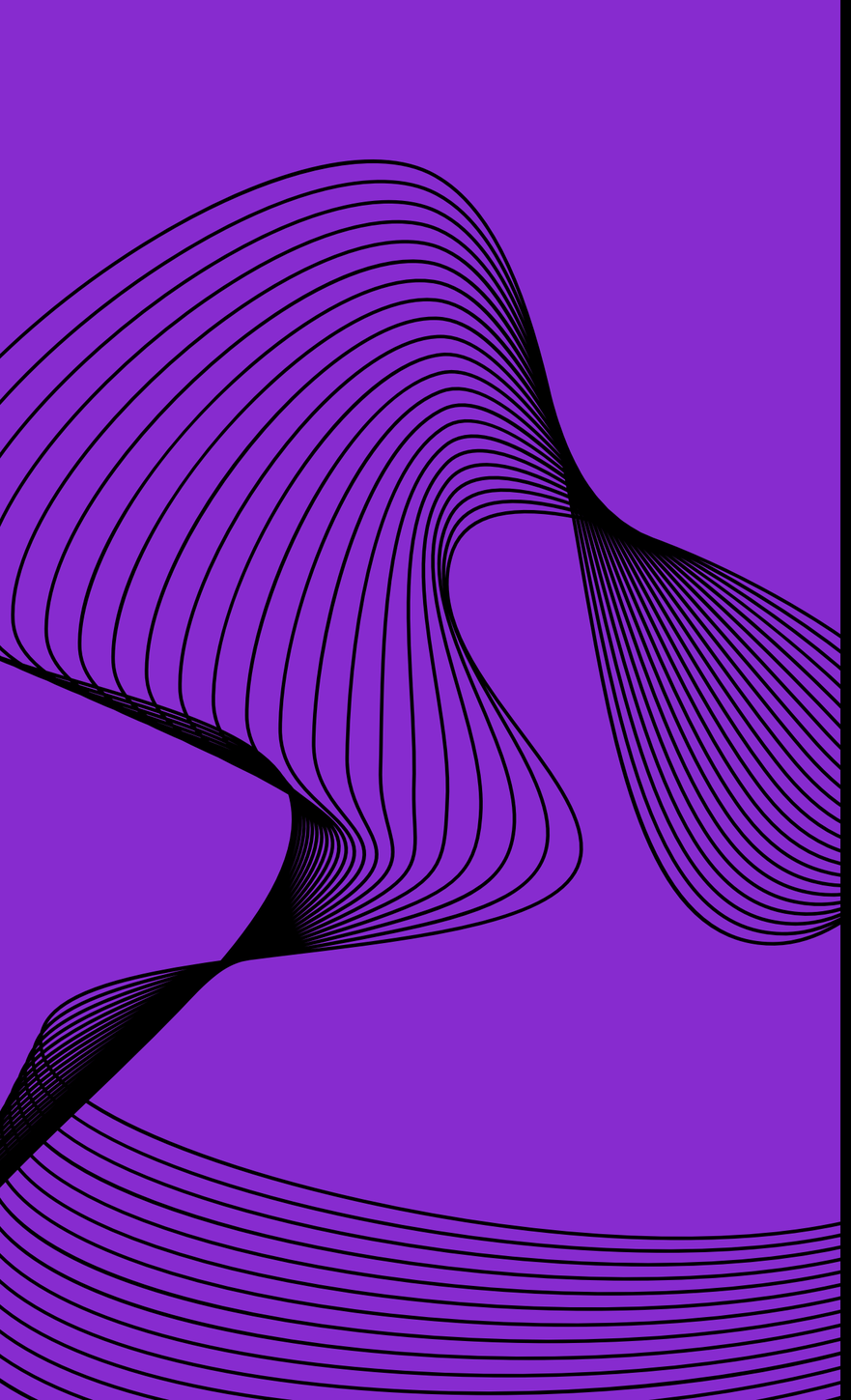

Modular Framework for Data Acquisition and Annotation

Authors:

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Supervisors:

- Samuel Silva
- Fábio Barros
- António Teixeira

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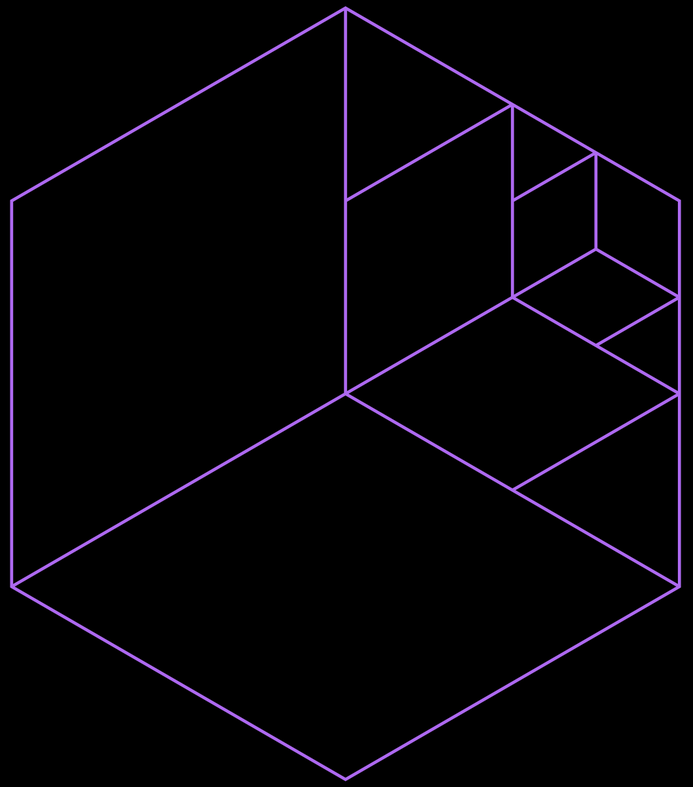
Context



INITIAL GOALS

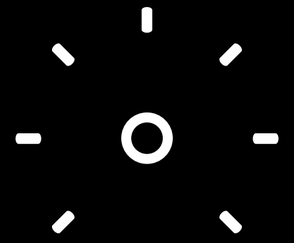
- Completed frontend
- Functional Database
- Model training capabilities

ACHIEVEMENTS

- Fully functional frontend
- Store all data in Database
- Standardized comunication between the API and Database

Overall features

- Modular Framework must be able to capture relevant data for data acquisition, annotation
- The system should provide tools for annotating the acquired data with labels and metadata that can be used to train and evaluate machine learning models
- Capable of recording videos
- Frontend fully operational
- Should be able to efficiently handle large amounts of data, and perform tasks such as data acquisition, annotation, feature extraction, and model training quickly and without any delays



Requirements M3

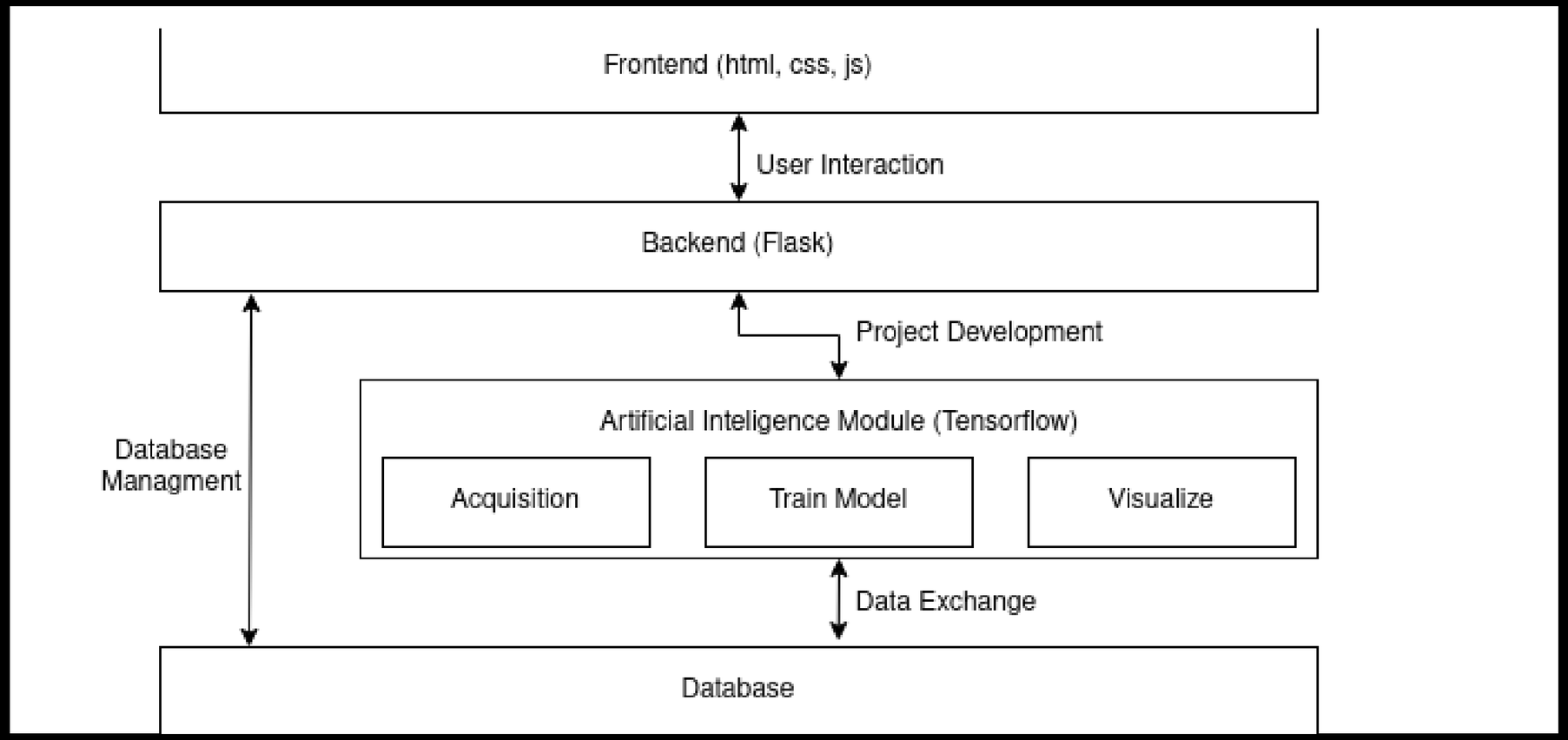
Functional

- Record video and audio
- Create new projects for dataset acquisition, training, and visualization
- Facilitate fast acquisition and training of datasets
- Recognize specified features in visualisation
- Properly store data
- Allow download of files

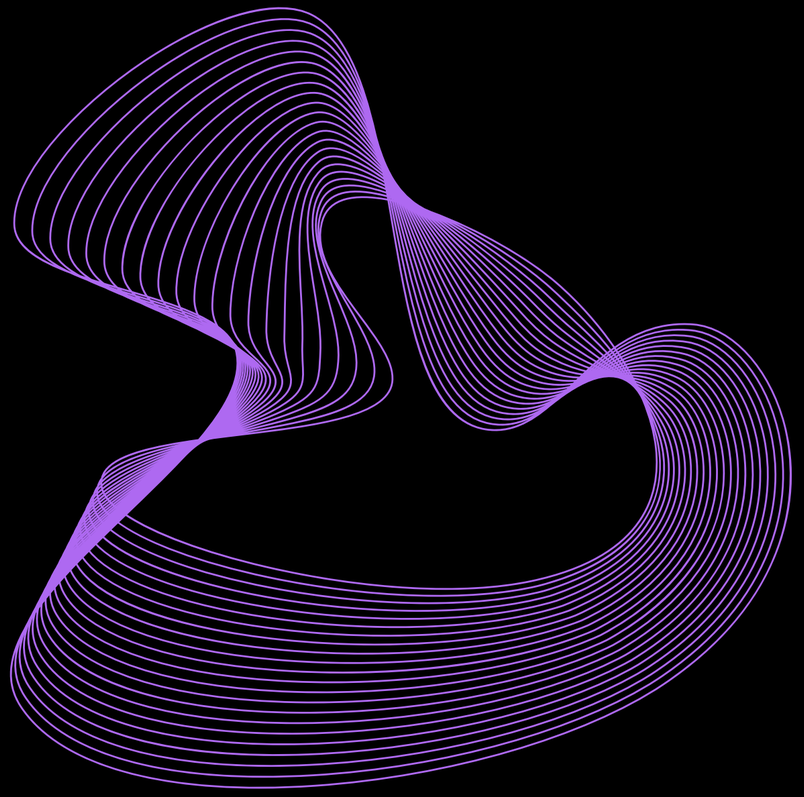
Non-Functional

- System must deal properly with various types of data
- Users should be able to easily navigate the system
- Unique identifier for each data instance
- Direct flow of data from the API to the Database

Architecture



CHALLENGES



CHALLENGES

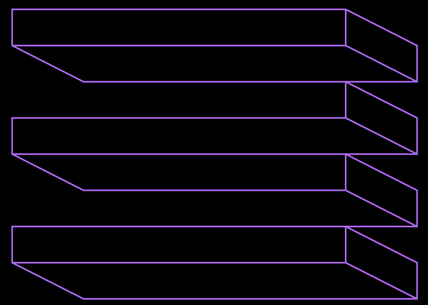
- Storing large files in the Database
- Acquiring various types of data
- Implement training capabilities

SOLUTIONS

- GridFs
- Modularization of API to enable data versatility

Related Work

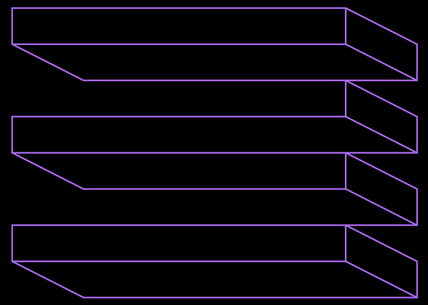
Related Work



QUIC SENSE

Similarities

- Support for data acquisition
- Data training
- Gesture recognition

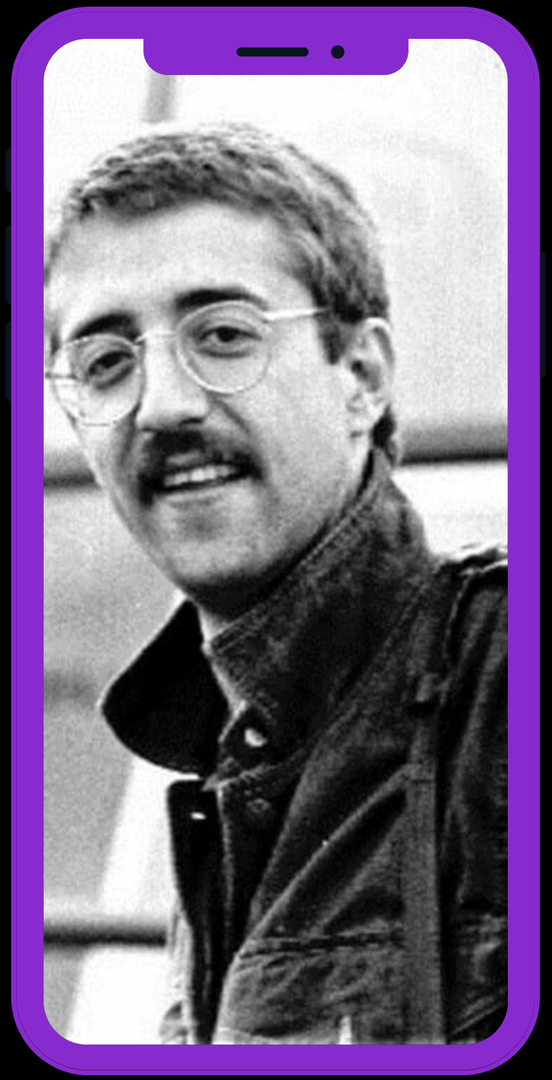


Diferences

- More understandable UI
- Lack of data inputs (only supports video).
- Action recognition

Personas & Use Cases

Persona



Rui Veloso - DataSet User

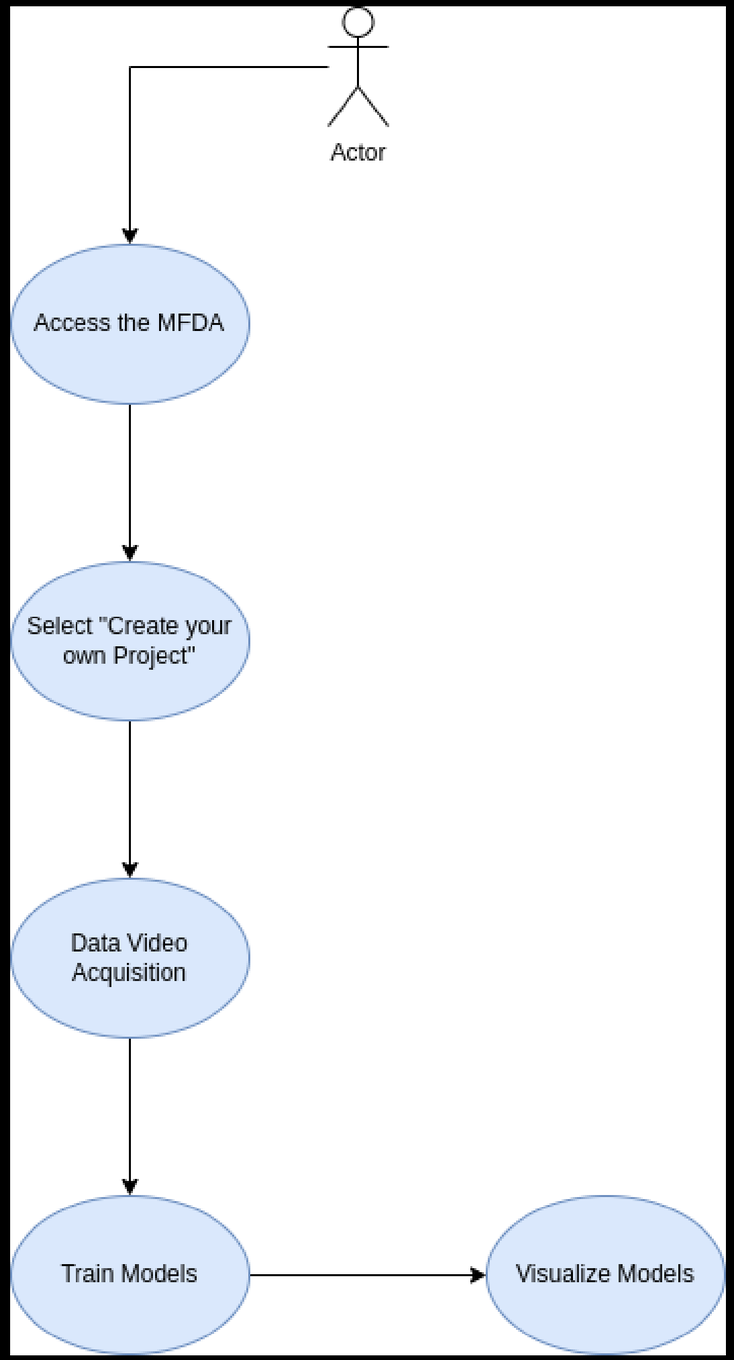
PERSONA

As a computer engineering student at University of Porto, Rui Veloso, 21 years old is always trying to improve himself and always striving to acquire novel knowledge and skills. Therefore, he is exploring and intends to implement a non-verbal Dataset,, so that he can apply it as a feature on his newest new project he is developing for the subject Human - Computer-Interaction

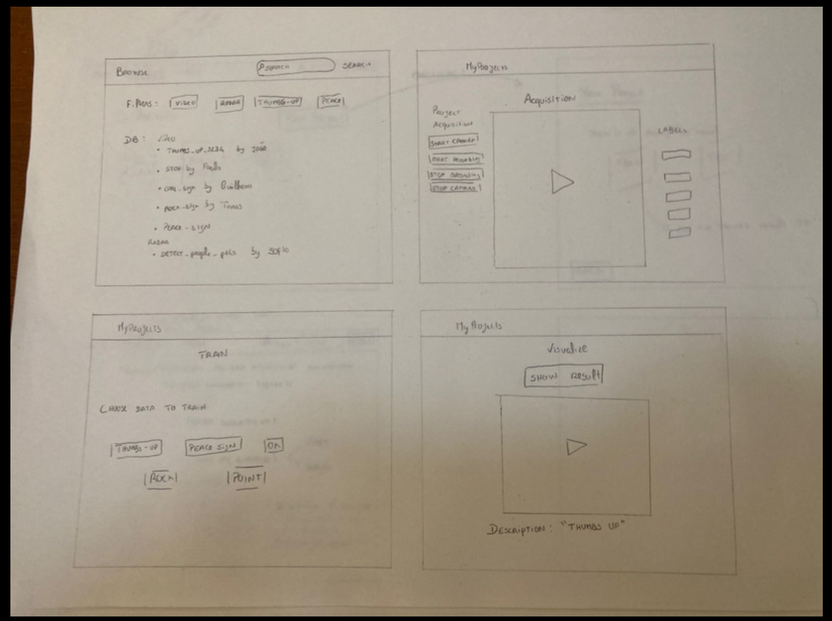
MOTIVATION

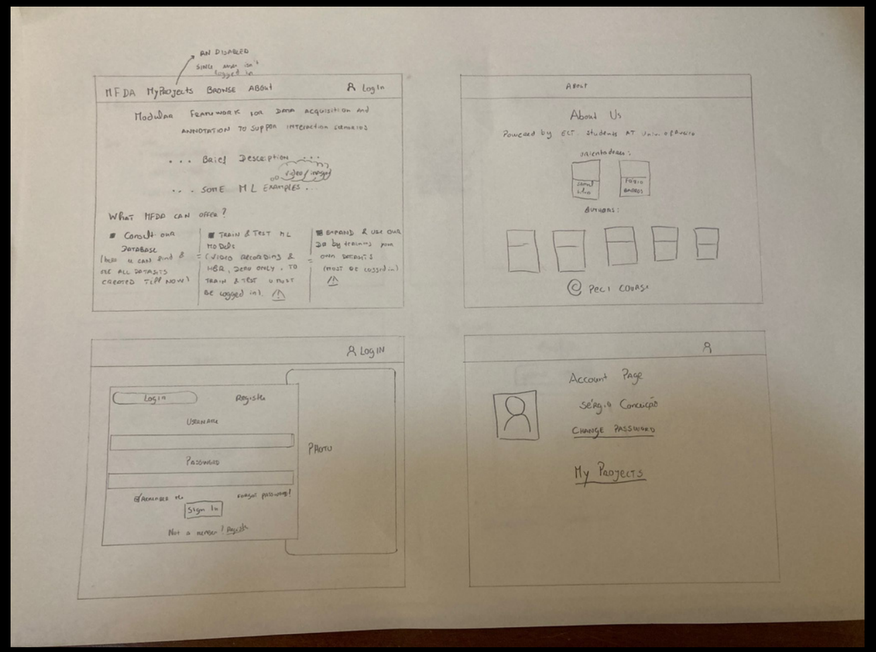
Rui wants to implement a non-verbal gestures DataSet.

USE CASE

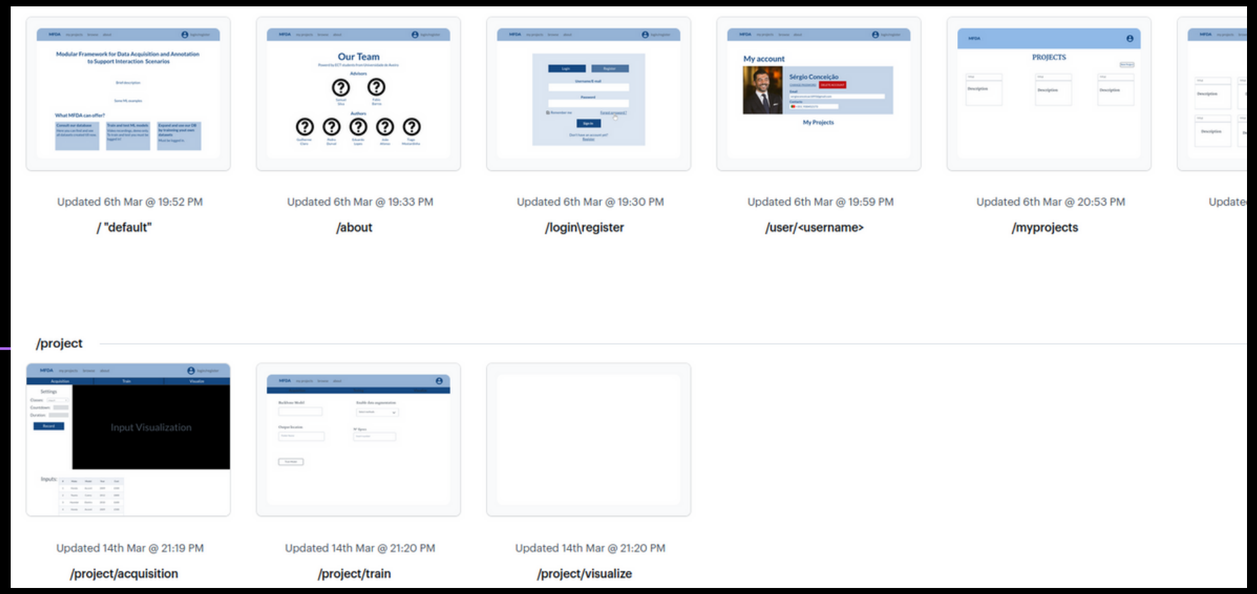

Actor
Access the MFDA
Select "Create your own Project"
Data Video Acquisition
Train Models
Visualize Models

DEVELOPMENT

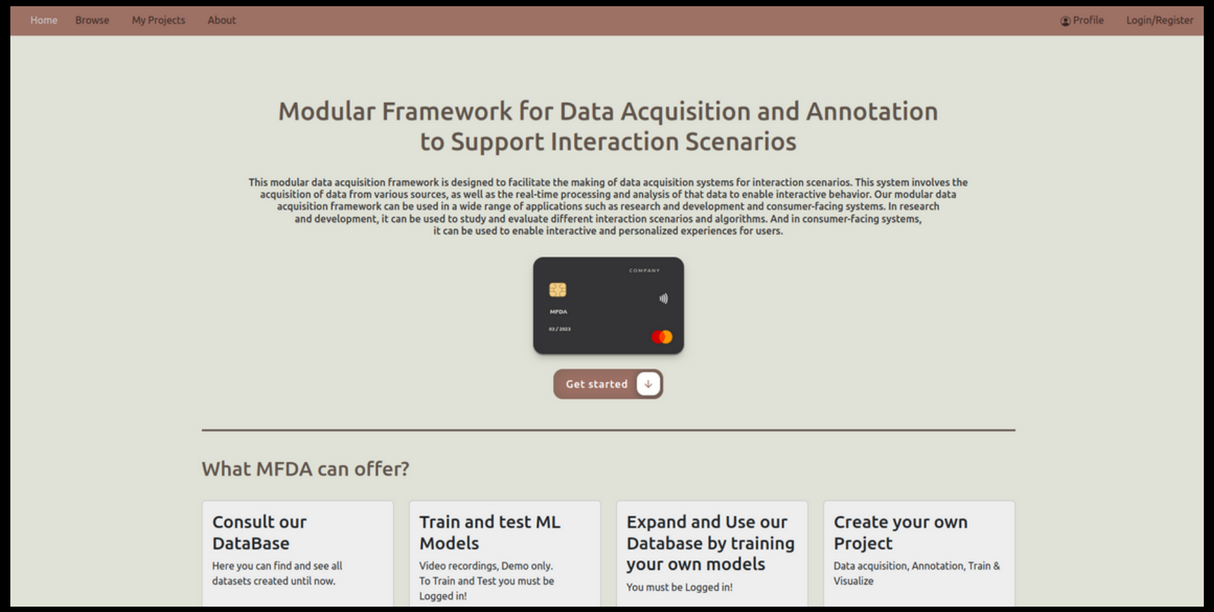




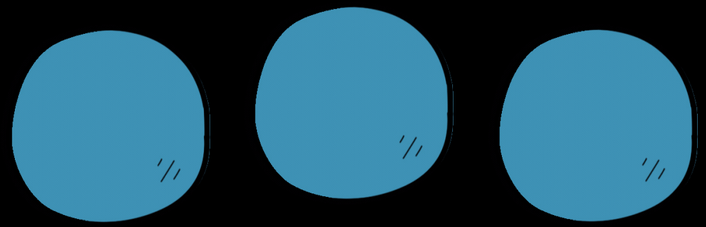
Prototype in Canva



Implemented Prototype Idea



LIVE DEMO



Conclusion & Future Work