A modular framework for data acquisition and annotation to support interaction scenarios

Computer and Informatics Engineering Project

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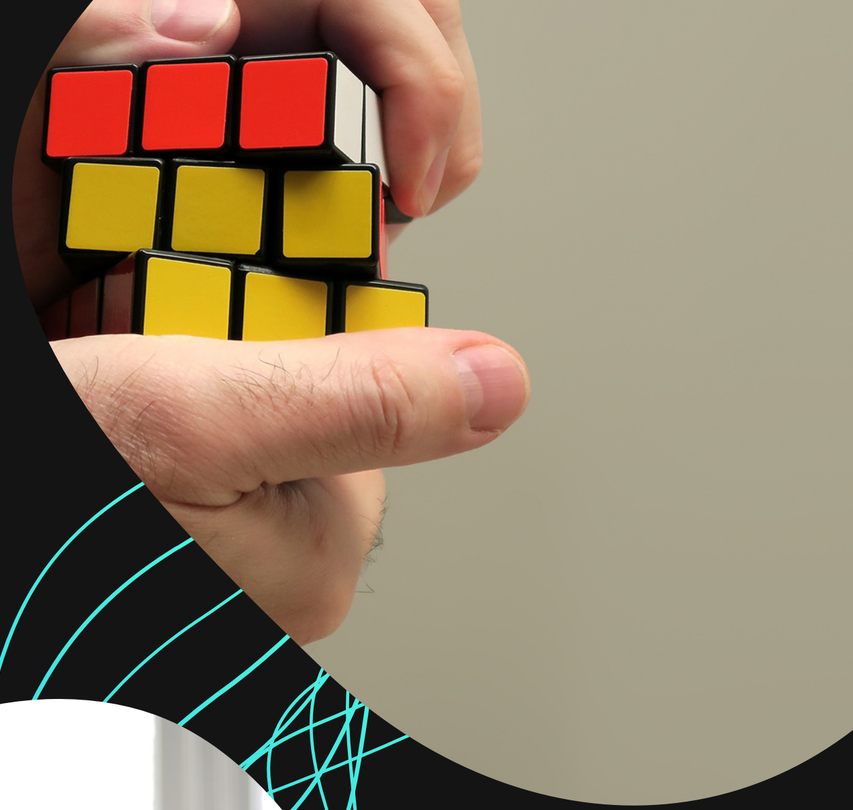
Context & Goal

Initial View

Development of a crowd-sourced environment where various users can contribute for the expansion of a dataset

Impact

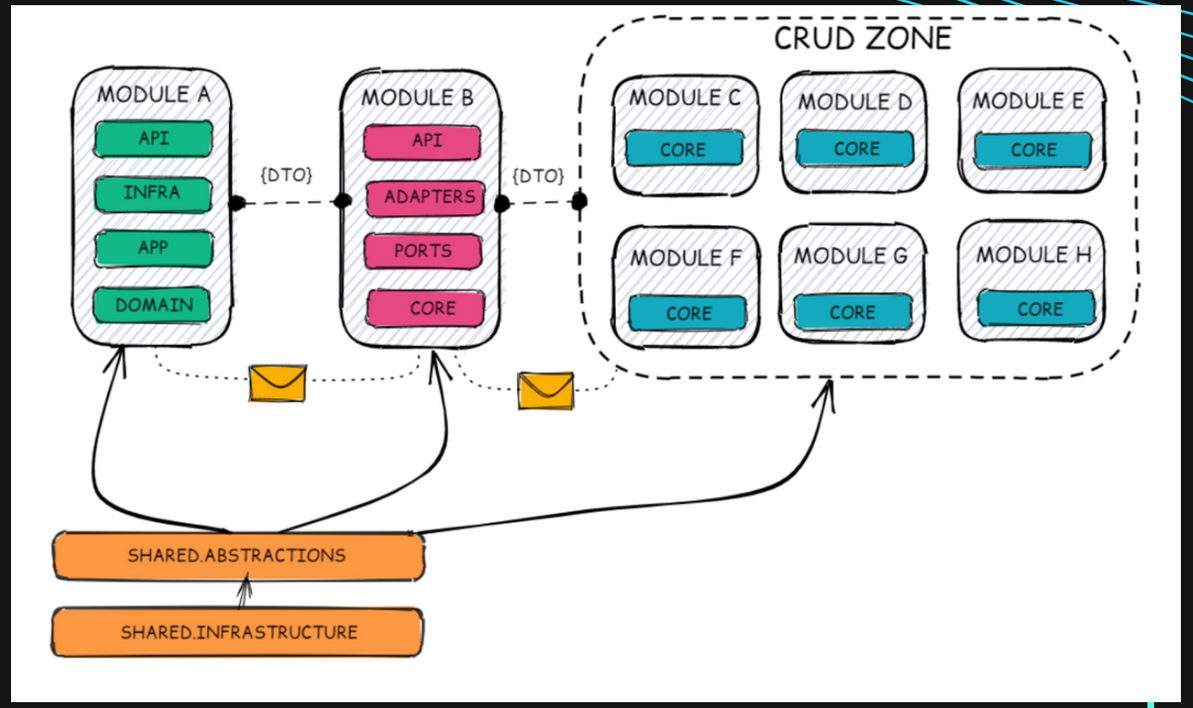
Evolving how nonverbal cues can be considered in our social interaction and with technology



Approach

A MODULAR FRAMEWORK

Consists of dividing the work at hand by different modules, so errors can have minimal impact and task attribution can be better defined



Tasks

REQUIREMENT ANALISYS

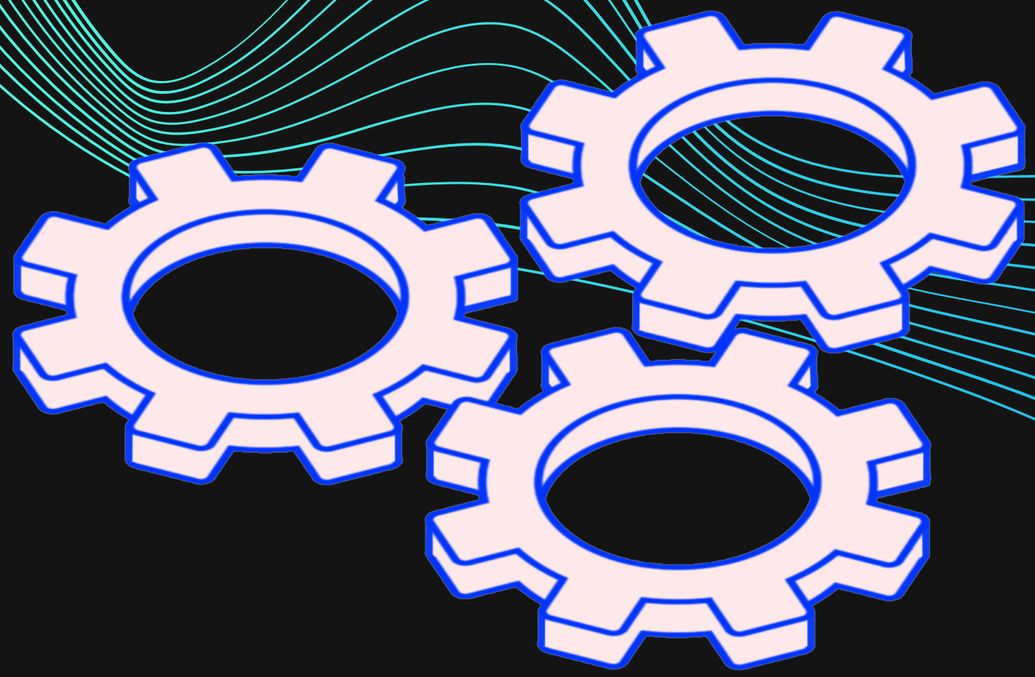
Evaluate our requirements so we can reach our main goal, working cycle & proof of concept

ARCHITECTURE DESIGN

Attending the dimension of our project, it's important to have an architecture design to develop the different modules of our framework in parallel

DEVELOPMENT

Put the designed architecture to work and strive to full-fill the determined requirements



HaGRID

RECOGNITION IMAGE DATASETS

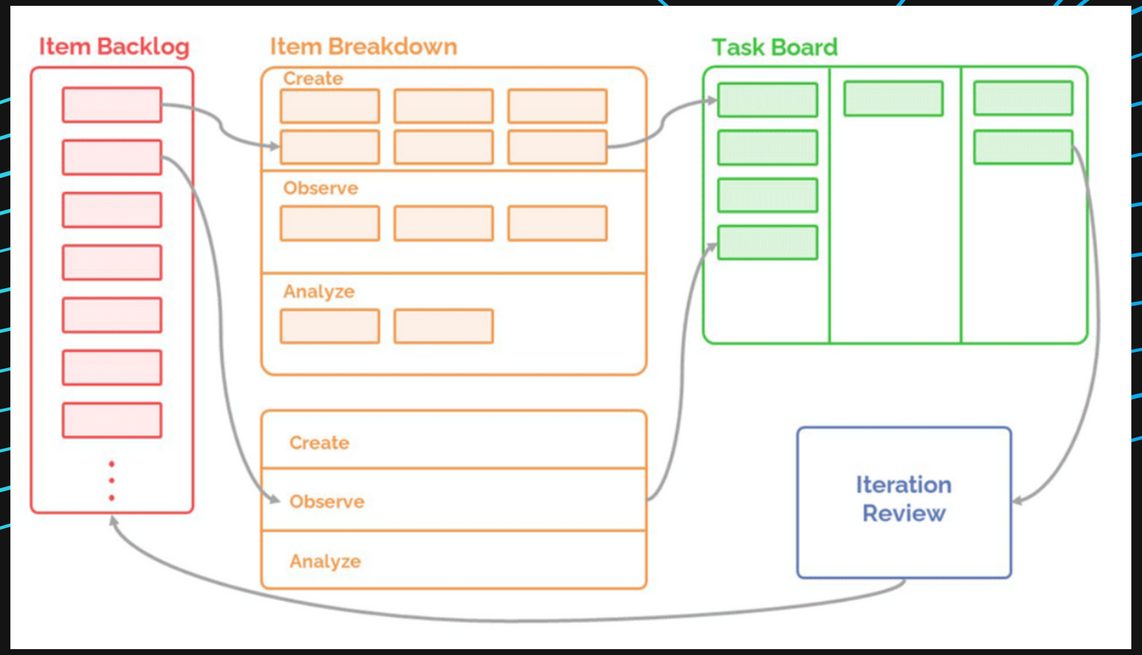
HAND GESTURE RECOGNITION (HGR)

Gestures can reinforce emotional statements or completely replace them.

DATASET

> This dataset contains 552,992 fullHD RGB images divided into 18 gesture classes.

Data Driven Scrum



Data Driven Scrum™ (DDS) is an agile framework specifically designed for data science teams. In short, DDS aims to improve a data science team’s collaboration and communication

Google ML Kit

GESTUAL, POSE, FACIAL RECOGNITION

FACE DETECTION (FD)

An API that allows detecting faces in an image, where it detects facial features.

SELFIE SEGMENTATION (SS)

An API that allows you to easily separate the background from the image and focus on the content.

DATASET (DS)

It contains a huge Dataset, allowing the algorithm the necessary tools to detect gestures, faces, poses and others.

Comunication Method

MICROSOFT TEAMS

Microsoft Teams, platform we are going to use to communicate with all the members of the team, Supervisors and Teacher.

GITHUB

Git platform to submit and orientate all work, tasks, code and backlog

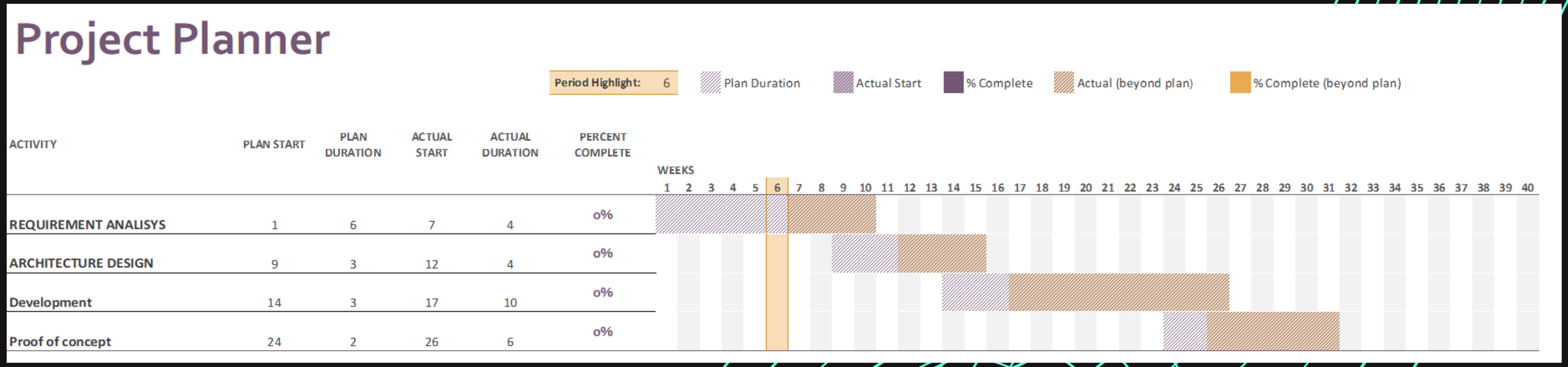
DISCORD

Discord platform to chat and do calls to discuss the subject and eventual problems

Calendar

Our project planning - Calendar

Project Planner



ACTIVITY	PLAN START	PLAN DURATION	ACTUAL START	ACTUAL DURATION	PERCENT COMPLETE
REQUIREMENT ANALISYS	1	6	7	4	0%
ARCHITECTURE DESIGN	9	3	12	4	0%
Development	14	3	17	10	0%
Proof of concept	24	2	26	6	0%

Assignments

- RECORD VIDEOS AND CATALOG
- MODULAR FRAMEWORK
- BACKLOG MANAGEMENT
- DOCUMENTATION
- RESEARCH WORK
- SYSTEM ANALYSIS

Expected results

Ease the creation of human/computer interaction environments

Framework that supports methods for creating new forms of interaction in ML from data acquisition to testing the created models

We pretend to expand our data base the best we can to be more accurate to all the users

Let's Work Together

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GITHUB

https://github.com/