Design notebook

Version Control

Version	Description	Author	Date(DD/MM/YYYY)
1.0	Initial version of Design notebook	Sejin Kim	27 Sep 2020

The Context for Design

The Task at Hand

The main task of this project is the development of a program to perform pose recording and armor detection, which are two of the various functions that will be used in robots in the robot competition.

The purpose of this project is to enable the robot to properly recognize the enemy's armor and pose through the input from the camera. The trivial task is to develop a model that applies an algorithm that performs armor detection and pose recognition through photo input, and to accomplish this, sample image files were provided to the client.

However, our final product will be completed by including the UI, and a general GUI design and product release will be discussed further in next sprint.

For more detailed information, please refer to Design Specifications .

What We Have Out of the Box

Refer to Requirements to check what's out of the scope of this project.

Choosing Appropriate Technologies

A Way to Collaborate

Team decided to use Github for version control and sharing code, Trello and Slack for communication.

The reason for this choice of platform is to save time to learn about platform and to focus on the actual tasks itself.

Choice of Object Detect Algorithm

The team decided to proceed with both object detection and pose recognition using the YOLO algorithm.

This was a method that improved the simplicity of the model by using a single algorithm, and the processing speed was faster than the traditional method used by the existing development team.

The evaluation was done by comparing the result of previous development team provided by the client and general evaluation of YOLO 4 performance

Initiating Development

Deployment Platform

In the early stages of development, the development team decided to use the Google Colab notebook.

This makes it easier to modify the model, and it has the advantage that the performance of the basic model can be assessed by executing it cell-by-cell without referring to a separate instruction manual, which is bothersome for the client.

User Interface

Separated GUI will be discussed in next sprint (Sprint 2). On sprint 1, the team is planning to use Google Colab notebook to leverage GPU power and test the performance of algorithms without hurdles.