DigiEduHack Solution
Turin - Improving the learning experience through Robotics
Challenge: Turin - Improving the learning experience through Robotics Challenge 2020

e.DO Painter

Use simple drawings to easily manipulate an e.DO Arm

The base idea of this work is to create a tool which can offers the opportunity to let the manipulator to reach a wished goal. With the use of intuitive GUI, it's possible to manipulate the arm by simly drawing the path!

Team: VDX Crew

Team members

Christian Ventriglia, Marco Desiderà , Samuele Xompero

Members roles and background

Christian Ventriglia (programmer, creative thinking), Marco Desiderà(programmer, video designer) , Samuele Xompero (programmer, work management)

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Solution Details

Solution description

We developed an application with an interactive Graphical User Interface implemented in Python. The program uses particular libraries to allow the user to draw on their screen, either with a mouse or other input devices. The instructions are sent to the e.DO Cube using the Pyedo library offered by Comau. The application uses the cartesian coordinates that specifies the position of each point that form the path drawn by the user, and sends these values to the e.DO in order to replicate the

movement. Our interface allow the e.Do arm to run continuous and smooth movements, which can be hardly achieved using the regular joystick application. Thanks to this solution users will provide better feedback with a better quality of service in the field of usability.

Solution context

Thanks to e.DO Painter, we are improving interaction between the user and the e.DO Arm. Our solution makes it easier for users to interact with e.DO.

Solution target group

This solutions targets younger groups, since it implements a more intuitive way of interacting with e.DO. It can also help older groups to get familiar with the robot on their firsts interactions, and moving later to more complex uses.

Solution impact

Our solutions prevents new customers from getting overwhelmed by an intricated interface. Thanks to this, it is expected an increase on the number of satisfied customers.

Solution tweet text

Draw the future with your imagination. Thanks to our innovative product controlling a robotic arm becomes a piece of cake!

Solution innovativeness

Our solution explores a new way of interacting and controlling robotic arms. Usually to perform this tasks, technical knowledge is required by the user. Robotic arms aren't usually designed to be used by non-technicians, so our solution is innovative because it can be applied in educative environments.

Solution transferability

Another plausible context is the art field. The robotic arm will follow the path drawn by the user, which means that it's even possible to make basic drawings. A reason to do this would be using the e.DO arm to draw paintings in a bigger scale!

Solution sustainability

The software developed by us is a simple prototype, which can be estensively improved with a lot of new features and a more appealing User Interface.

Solution team work

Although it was not easy to communicate efficiently with the team, we were able to get by with various digital communication tools, such as Zoom or Discord. We were able to correctly share the

workload and organize our work.