

Project: Air Canvas

Team: Python Thinkers

Team Members

Anto Francis (C0825095)

Omer Volkan(C0856373)

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Sachin Sreekumar (C0825096)

Reporting Week: 15th Jan 2022 - 21st Jan 2022

Supervised by

Prof. Parissa Naraei

I. Task Outline

Find a suitable project that adheres to the guidelines provided by the course instructor.

II. Progress Made

Tried to connect with companies for real life problems through LinkedIn. Finally came up with the project proposal that is explained below.

III. Proposal

In the current digital era, traditional art is being replaced by digital art. Traditional art involves pen and paper, whereas the aim of digital art is to make use of hand gestures to write or draw digitally on the monitor. In this project, we are going to build a system, where we can draw anything by capturing the motion of an object, with the use of a machine learning algorithm. Here we use any colored object at the tip of our finger as the marker. We will be using computer vision techniques of OpenCV and will be using python to implement this due to its vast collection of libraries.

IV. Learnings

The team researched about the topic. What all requirements are needed to implement the idea and made an outline of how it can be implemented.

V. Modules:

- **Input Modification Module:** The frames coming from the webcam are converted into HSV color space for detection of the live gestures in the webcam.

- **Canvas Layout module:** In this module, the canvas frame is setup with some controls to change the color and other features.
- **Trackbar Setup module:** This module is responsible for arranging the HSV values to the required range of color of the colored object that we have placed at our finger to form a mask. This mask is preprocessed with various morphological operations.
- **Contour Detection module:** In this module, the colored object at the finger is detected. We will get the realtime value from the trackbars and create range of values to plot the drawings

VI. Team Member Responsibilities

S. No	Module	Team Member
1	Input Modification Module	Anto Francis
2	Canvas Layout Module	Rupesh Chandra
3	Trackbar Setup Module	Sachin Sreekumar
4	Contour Detection Module	Omer Volkan Guney

VII. Tools Required

- Pycharm (Python IDE)
- Jira

VIII. Agenda for Next Week

- Identify the challenges in implementing the project
- Identify tasks in each module
- Get familiarised with Jira

IX. References

Saoji, P. S. U., Dua, N., Choudhary, A. K., & Phogat, B. (2021). *Air Canvas Application Using Opencv And Numpy In Python* (Vol. 08). Aug.