**Experiment Project Documentation**

**Introduction**

This document captures the technical details related to the experiment development.

**Project**

**Domain Name :** Computer science engineering

**Lab Name :**Image processing

**Experiment Name :** Affine transformation

Affine transformation is a linear mapping method that preserves points, straight lines, and planes. Sets of parallel lines remain parallel after an affine transformation. The affine transformation technique is typically used to correct for geometric distortions or deformations that occur with non-ideal camera angles.

Here the main obective is

* To learn basic image transformation
  + Translation
  + Rotation
  + Scaling
* To learn the role of interpolation operation
  + Bi-linear
  + Bi-cubic
  + Nearest neighbor

**Purpose of the project**

The purpose of the project is to convert the **Affine transformations** experiment simulation from **php** to **Javascript/python**.

**Project Developers Details**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.NO** | **Names** | **Year of Study** | **Role** | **Email-ID** | **github handles** |
| 1. | Cheruku Priyanka | Btech 4th year | Developer | Priyankacheruku2016@gmail.com | priyankacheruku |

**Technologies and Libraries**

**Technologies :**

1. HTML
2. CSS
3. Javascript

**Libraries :**

1. **bootstrap.min.css**
2. **jquery.min.js**
3. **bootstrap.min.js**
4. **opencv**
5. **imutils**
6. **flask**
7. **matplotlib**
8. **json**
9. **Image**

**Development Environment**

**OS :**Ubuntu 18.0

**Bandwidth:** 100Mbps

**Documents :**

|  |  |  |
| --- | --- | --- |
| **S.NO** | **Link to Document** | **Role** |
| 1. | Procedure | This document captures the instructions to run the simulations |
| 2. | Test Cases | This document captures the functional test cases of the experiment simulation |
| 3. | Code Documentation | This document captures the details related to code |

**Process Followed to convert the experiment**

1. Understand the assigned experiment Java simulation(which is incomplete)
2. Understanding the experiment concept
3. Re-implement the same in javascript and python using flask framework

**Value Added by our Project**

1. It would be beneficial for engineering students
2. Highly beneficial for tier 2 and tier 3 college students who can use this to learn and understand the concept of perception learning.

**Risks and Challenges**

learning flask framework and understanding the theory of openCv libraries

**Issues :**

The experiment will run only on virtual environment and adoptable for desktops only.