Count Things

Virag Patel
Information Technology
Chandubhai S Patel Institiute of
Technology, CHARUSAT
Anand,India
19it114@charusat.edu.in

Abstract— **This paper presents a project using open cv – python, where a user can count the number of objects from a image according to the available template.**

I. INTRODUCTION

It is an interface where the user interacts by uploading an image and selecting the suitable template(cascade-classifier) for the detection of the objects.

This Project aims to help to simplify the tedious task of counting things. As a person who, everybody would like to get their task done within a fraction of seconds. So, to help the community this project is developed, which helps by counting a particular object occurrence in a particular image within fraction of seconds.

II. STUDY OF PREVIOUS SYSTEM

A. Count Things from Photo

Count Things from Photos app helps businesses automate counting. Open the app, select the right Counting Template for your items, take a photo, and count. If we don't have a Counting Template for your needs, let us know, and we can create one.

B. Dotdot Goose

DotDotGoose is a free, open source tool to assist with manually counting objects in images. DotDotGoose was purpose-built since most conservation researchers and practitioners working on counting objects in images were using popular software which are not ideally suited for many conservation applications.

III. MOTIVATION

As a person who, everybody would like to get their task done within a fraction of seconds. So, to help the community this project is developed, which helps by counting a particular object occurrence in a particular image within fraction of seconds.

A. Uniqueness of the Project

1.The Graphics

This project contains a very good graphics and understandable graphic user interface.

2.User Input

It expects the user to input the image from which the detection of objects needs to be done and select the particular template

IV. PROPOSED SYSTEM

A. What is the System?

For the completion of this particular project,

1) Information regarding the selection: Firstly it will include a haar cascade classifier on basis of which the object detection would be carried out.

2) Error Handling: It will generate some errors when the image from which the object needs to be found would be blur or not clear

B. Reason for Selecting Python.

1) OpenCV-Python is a library of Python bindings designed to solve computer vision problems.

2) Python is a general-purpose programming language

started by Guido van Rossum that became very popular very quickly, mainly because of its simplicity and code readability. It enables the programmer to express ideas in fewer lines of code without reducing readability.

3) Compared to languages like C/C++, Python is slower. That said, Python can be easily extended with C/C++, which allows us to write computationally intensive code in C/C++ and create Python wrappers that can be used as Python modules. This gives us two advantages: first, the code is as fast as the original C/C++ code (since it is the actual C++ code working in background) and second, it easier to code in Python than C/C++. OpenCV-Python is a Python wrapper for the original OpenCV C++ implementation.

4) OpenCV-Python makes use of Numpy, which is a highly optimized library for numerical operations with a MATLAB-style syntax. All the OpenCV array structures are converted to and from Numpy arrays. This also makes it easier to integrate with other libraries that use Numpy such as SciPy and Matplotlib

It has many other various reasons for selecting it as the basis of this project.

C. Target audience for this Project

The main target sector for this project would be the Road transport where counting goes on daily and it is very tedious task

D. Development Stratergies

It would be developed using python with some of the frameworks which include OPEN-CV, NumPy, Matplotlib and would be based on detecting objects from an image only.

IMPLEMENTATION STRATERGY

The following listed are the basic requirements for this project

A. Hardware requirements

- Modern Operating System:
- Windows 7 or 10
- Mac OS X 10.11 or higher, 64-bit
- Linux: RHEL 6/7, 64-bit (almost all libraries also work in Ubuntu)
- x86 64-bit CPU (Intel / AMD architecture)
- 4 GB RAM
- 5 GB free disk space

B. Software Requirements

opencv-3.4.0 needs to compile atleast 1GB RAM with 2GB swap memory compulsory cause less than this configuration open-cv will not able to compile on that system to generate object code. If u download binary version then it will run on minimum configurations than this.OS

If you're developing against the AOSP master branch, use either Ubuntu 18.04 (Bionic Beaver) or the latest versions of macOS and Xcode with command line tools installed.

1.Reason for selecting

1.Python

This gives us two advantages: first, the code is as fast as the original C/C++ code (since it is the actual C++ code

working in background) and second, it easier to code in Python than C/C++. OpenCV-Python is a Python wrapper for the original OpenCV C++ implementation

2.Python over C++

The main reasons being

Python is easier than C++. Python is much more **beginner-friendly**, while **C++ is a more complicated**, low-level language. C++ has **more syntax rules** and other programming conventions, while Python aims to imitate the regular English language.

TEST CASES

Some of the Test Cases were performed to avoid the errors which included

1. Image Containing multiple face were tested
2. Verified whether for given cascade classifier, the detection is successfully done or not
3. Verified for the correctness of Output.

SCOPE AND FUTURE WORK

This project will further look to get more template of different object, so as to carry out object detection more swiftly.

The cascade classifier used to train the model were taken from the the official site and not prepared on own.

So it will now contain our own trained dataset (classifier) and counting of non-living objects also

REFERENCES

- Count Things from Phot
- www.opencv.com
- Rod Calculator – An android application available on play store.
- [Wikipedia](#)
- Python
- Pycharm
- Numpy