# Analysis of Image Processing Results

By
Ravi Jain
(Roll No. 2013167)

## SUPERVISOR(S):

**EXTERNAL:**

Mr. Radhish Ayyappan
Project Manager
Canon ISDC, Bangalore

**INTERNAL:**

Prof. Ayan Seal
Professor
PDPM IIIT DM Jabalpur

**Computer Science Engineering (B. Tech 2013)**

**INDIAN INSTITUTE OF INFORMATION TECHNOLOGY, DESIGN AND MANUFACTURING JABALPUR**

Mid Term Report

($27^{th}$ July 2016 – $9^{th}$ August 2016)

## Introduction –

- The aim of this project is to design a dashboard for certain csv(comma separated value) and log files, which would display details of these in addition to certain graphs for indicating kernel execution times.
- The python program takes as input a csv file, its corresponding log file, median value files (if any) and path to the images which can be viewed in the dashboard.
- The skills used for the development of this dashboard are python, angularjs, javascript, bootstrap, css, html, matplotlib and jquery.

## Procedure –

- The dashboard serves the purpose of displaying details such as kernel execution time, total time etc. on executing certain algorithms over several images and drawing a comparison between different test environment types.
- The set of csv files include details of algorithms such as sum of squared differences, mutual induction, gradient image filter etc.
- The aim was to display the logs of execution of these algorithms over certain images.
- Furthermore, graphs were also made using matplotlib, including comparison plots, box plots.
- Modules such as numpy were used.
- The initial task was to understand use of these tools and install libraries on my system.
- On executing the program, it generates a result.html file which displays the required details and graphs.
- Angularjs and jquery are used for sorting the contents within a table, according to column.
- Bootstrap, css are used for overall styling of the html file.
- Python is the language in which whole code is written.
- Matplotlib is used to generate comparison plots and box plots.

## Beautiful Soup –

**Beautiful Soup** is a Python package for parsing HTML and XML documents (including having malformed markup, i.e. non-closed tags, so named after tag soup). It creates a parse tree for parsed pages that can be used to extract data from HTML, which is useful for web scraping.[2]

It is available for Python 2.6+ and Python 3.

## matplotlib –

**matplotlib** is a plotting library for the Python programming language and its numerical mathematics extension NumPy. It provides an object-oriented API for embedding plots into applications using general-purposeGUI toolkits like wxPython, Qt, or GTK+. There is also a procedural "pylab" interface based on a state machine (like OpenGL), designed to closely resemble that of MATLAB. SciPy makes use of matplotlib.

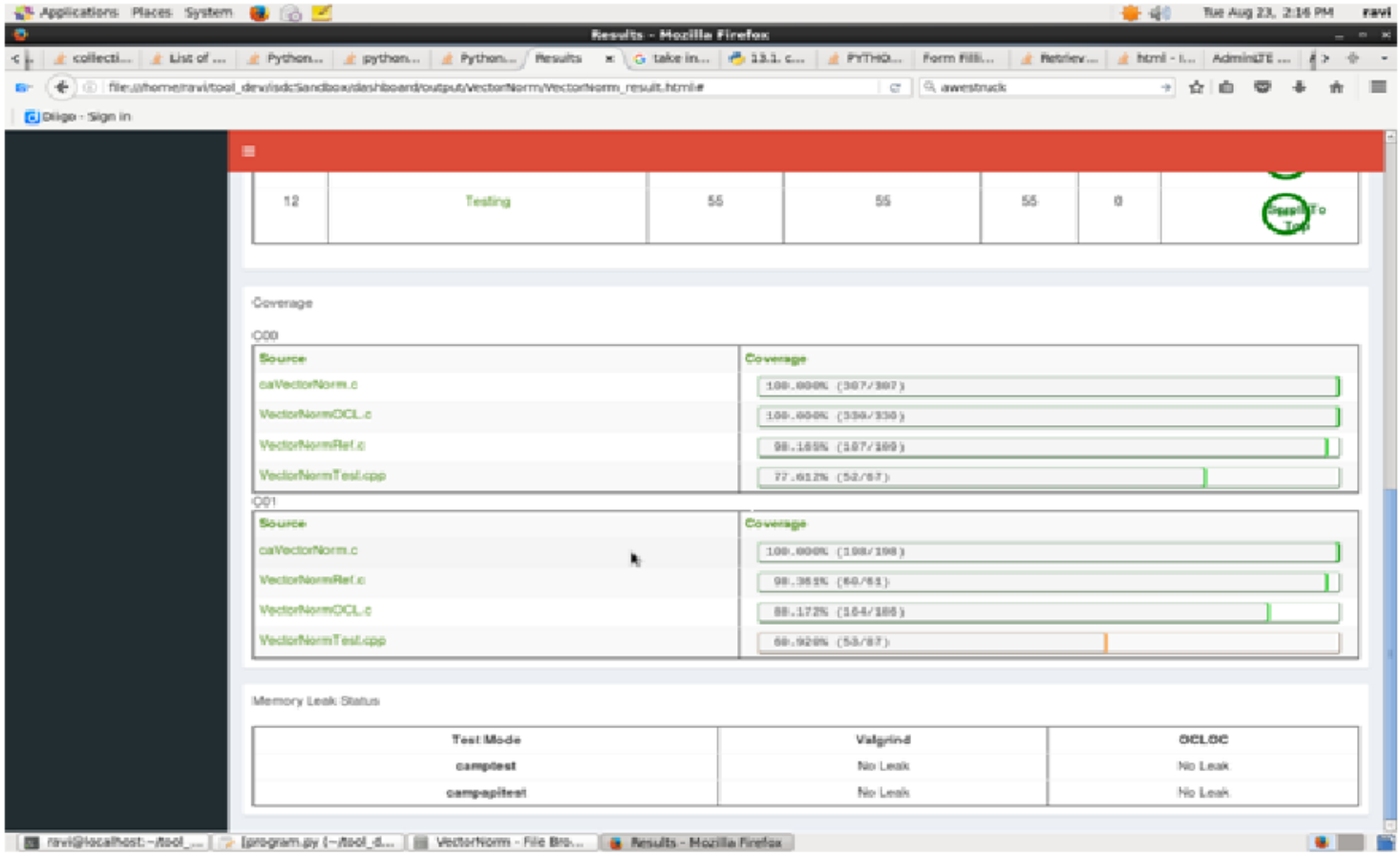
matplotlib was originally written by John D. Hunter, has an active development community and is distributed under a BSD-style license. Michael Droettboom was nominated as matplotlib's lead developer shortly before John Hunter's death in 2012.

As of 30 October 2015, matplotlib 1.5.x supports Python versions 2.7 through 3.5. Matplotlib 1.2 is the first version of matplotlib to support Python 3.x. Matplotlib 1.4 is the last version of matplotlib to support Python 2.6.

## Dashboard creation using Jquery -

Often, the "dashboard" is displayed on a web page that is linked to a database which allows the report to be constantly updated. For example, a manufacturing dashboard may show numbers related to productivity such as number of parts manufactured, or number of failed quality inspections per hour. Similarly, a human resources dashboard may show numbers related to staff recruitment, retention and composition, for example number of open positions, or average days or cost per recruitment.

## Screenshots of Output generated -




Due to company's terms and conditions, can't share all images.

## Tools Used -

- Python 2.7
- Matplotlib
- Gedit, sublime
- Jquery, javascript
- Angularjs
- bootstrap, css, html
- beautiful soup

## Conclusion –

- The readings and output were successfully obtained.
- Certain observations were made regarding these operators.
- The python programming code was able to generate the required files.