Deven Patel

deven.patel2@gmail.com
+919819482499

PROFILE

A Computer Vision post graduate with experience as a developer as well as a researcher in the field of Image Processing and Computer Vision. Proficient with OpenCV on Linux as well as Android platforms and have extensively worked on relevant projects.

EXPERIENCE

Image Processing Consultant 2014-Present
Binaryveda Software Ltd. CBD-Belapur, Navi Mumbai.

- Developed an image matching and recognition feature for a photo-printer Android app. An 85% recognition accuracy was achieved. The application uses algorithms from computer vision as well as machine learning to extract features from the photograph using mobile camera and search a match from an existing database. The program uses techniques like SIFT-like feature matching, SVM, and other various computer vision methodologies.
- Developed a python based basic image analysis application. The application segments natural images into different components. It also does face detection, pedestrian detection and segmentation of images into super-pixels.
- Designed and developed an app feature that scans and recognizes simple logos using OCR and machine learning techniques. The app also performs pre-processing processing tasks like segmentation, circle detection etc.

Assistant Professor 2012- 2014
RGIT. Andheri, Mumbai.

- Worked on two image processing based projects: *Gesture Recognition*, *Head Tracking*. The Gesture Recognition uses ideas from PCA based eigenfaces used for face recognition. The Head Tracking project used Viola-Jones face detector. The output of the face detector is then used to change the viewing angle of a simple augmented cube on the screen.
- Conducted courses and designed lab experiments/assignments for courses like DSP, Image Processing and Random Signal Analysis. These experiments included simulation of random processes, implementation of image processing algorithms like filtering, image transforms etc.
- Introduced the use of OpenCV for Image Processing laboratory. Prior to this Matlab was used for image processing laboratory. I promoted and introduced OpenCV for image processing experiments as it is more used in actual applications.

Research Scholar 2008-2012
IIT-B Powai, Mumbai.

- Multiple low resolution images of the same scene are fused to super-resolve or obtain high resolution image of the scene. This technique is called Super-Resolution. The method outperforms simple interpolation techniques in terms of artifact removal, noise and PSNR. It gives higher quality high resolution image which are better than the popular bi-cubic or other interpolation techniques.
- This method is also then used for converting SDTV video to HDTV video. Frames in SDTV images are of lower resolution and a different aspect ratio than HDTV videos. Super-resolution was used for this conversion and the results were found to be better than simple resizing or interpolation.
- Used optical-flow for the SR-technique to free the process from the traditional global motion assumption. This enabled to do a point based-registration and discard a global translation/motion assumption. The method allows to register images that does not follow the global motion model.

EDUCATION

Research Scholar, IIT-B, Mumbai.

M.Tech (ICT) from DA-IICT, Gandhinagar.

B.E (E.C) Saurashtra University, Gujarat.

TECHNICAL SKILLS

Programming : C/C++, Python, Java, Linux Scripting

Tools : Matlab, Octave, OpenCV, Eclipse/Android Studio

PUBLICATION

Deven Patel, Subhasis Chaudhuri: Performance Analysis for Image Super-Resolution Using Blur as a Cue. IEEE-ICAPR 2009