Ameya Joshi

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**Education**

2010–2014 Bachelor of Engineering (Hons.), Electrical and Electronics Engineering,

Birla Institute of Technology and Science, Pilani, Goa, GPA – 7.98.

**Experience**

Mar 2015 – Present Member of Technical Staff,

Tonbo Imaging Pvt. Ltd., Bengaluru, India.

Computer Vision and Embedded Linux Firmware Programmer

Detailed achievements:

* Worked on Linux based systems for video surveillance systems for defence applications
* Experience in ubl, uboot and linux kernel customization, device driver development and debugging
* Experience in porting video applications and algorithms for embedded platforms like TI DaVinci platforms
* Designed, developed and maintained applications for various product lines

June 2014 – Mar 2015 Computer Vision Engineer,

Ducere Technologies, Hyderabad, India.

Computer Vision and Embedded Firmware Programmer

Detailed achievements:

* Worked on LeChal, the flagship product aimed at providing navigational cues to the visually impaired
* Implemented a system for image acquisition and processing with Omnivision OV2640 on STM32F4 ARM platform for image acquisition
* Designed and implemented the firmware architecture for a variant of the product on STM32L0 Platform.

Jun 2014 – Dec 2014 Computer Vision Intern,

Ducere Technologies, Hyderabad, India.

Worked on designing obstacle avoidance systems for the blind

Detailed achievements:

* Designed and implemented a prototype for a computer vision system for obstacle avoidance using stereo-vision and saliency modelling.
* Designed and implemented a Tesseract OCR based document analysis module for a prototype
* Developed a project for No-ball detection (Cricket) to work with a single camera using motion heuristics

Jan 2013 – May 2013 Student Instructor, Computer Vision,

CTE, BITS Goa, Goa.

Instructor for Computer Vision, a vocational course for somphomores and juniors

Detailed achievements:

* Designed and taught a computer vision course to a class of juniors and sophomores.
* Examples were created in OpenCV to illustrate Feature Extraction, Machine Learning, Background Subtraction and Object Localization.

**Publications**

*ACM Selective Visualization of Anomalies in Fundus Images via Sparse and Low Rank*

*SIGGRAPH Decomposition. -*2014

*A. Mahurkar, A. Joshi, N. Nallapareddy, P. Reddy,A. Kadambi, M. Feigin, R. Raskar*

**Projects**

Jan 2014 – Jun 2014 Selective Visualization of Anomalies in Fundus Images via Sparse and Low Rank Decomposition , In association with MIT Media Labs.

* Worked on segmenting and enhancing anomalous lesions in retinal fundus images using rank and sparsity.
* Results were published as a poster in SIGGRAPH-2014

Mar 2013 – May 2014 Leaf Recognition, BITS Goa, Advisor: Dr. Meenal Kowshik.

* A Leaf recognition Algorithm based on feature clustering and bag of words
* It was further expanded using developed VLAD and Fisher Vector modules
* Net accuracy obtained on the Flavia Dataset is 93.6% which is comparable to state of the art methods using handcrafted features

Oct 2012 – Dec 2012 Segmentation and Recognition of Electronic Circuit Symbols in images, BITS Goa.

* Developed an algorithm to segment and recognise circuit symbols from natural images.
* Used OpenCV for bag of words and the OpenCV wrapper for libsvm

Oct 2012 – Dec 2012 Study and Implementation of Ant Colony Algorithms, BITS Goa, Advisor: Dr. Sangeeta Jaiswal.

* The project deals with the studying and implementing the properties and variations of Ant Colony Algorithms.
* Implemented various flavors of ACO using C++ Standard Template Libary and Python for visualization.

Oct 2011 – Dec 2012 Virtual Canvas: A Hand Tracking System using Background Subtraction and Color Predicates, BITS Goa.

* Developed a system to track a user’s hand using a laptop web-cam for drawing on the screen.
* Implemented background subtraction and trained a color model for hand detection and tracking in OpenCV.

**Awards**

* 2010-2014 Awardee of the BITS Merit-cum-Need Scholarship
* 2009 National Talent Search Scholar, one of the top 500 students selected as a science scholar

**Skills**

Languages C/C++, Python, MATLAB, L A TEX

Packages and Tools

Libraries libv4l2, OpenCV,STL C++, SimpleCV, scikit-learn

Embedded TI DM365, TI DM8168, STM32 ARM Cortex (M0+, M3, M4F), EFM32 (ARM Cortex M0+, M3),

Platforms AVR Atmega

DSP Platforms DSK 6713

Tools IAR for ARM, Keil, gdb, kgdb