Ameya Joshi

Curriculum Vitae

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My Blog
Computer Vision Engineer

Education

2010–2014 **Bachelor of Engineering (Hons.), Electrical and Electronics Engineering**, *Birla Institute of Technology and Science, Pilani*, Goa, *GPA – 7.98*.

Experience

June 2014 – Present **Computer Vision Engineer**, Ducere Technologies, Hyderabad, India.
Computer Vision Specialist. Embedded Firmware Programmer
Detailed achievements:
- Worked on LeChal, the flagship product aimed at providing navigational freedom to the visually impaired
- Implemented a system for image acquisition on STM32F4 ARM platform for image acquisition
- Designed the firmware architecture for a variant of the product.

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
- Improved an existing project for No-ball detection (Cricket) to work with a single camera instead of stereo vision using motion heuristics

Publications

ACM SIGGRAPH 2014 **Selective Visualization of Anomalies in Fundus Images via Sparse and Low Rank Decomposition**.
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 Low Rank and Sparse decomposition
- Results were published as a poster in SIGGRAPH-2014
- Work on implementing the same for visual diagnostic devices is being undertaken.

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 to use VLAD and Fisher Vector modules
- Net accuracy obtained 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 the properties and variations of Ant Colony Algorithms.
- Implemented various flavors of ACO using C++ Standard Template Libary and Python

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

Advanced C/C++

Intermediate Python, LaTeX

Basic Android Java

Packages and Tools

Computer Vision OpenCV, MATLAB, SimpleCV

Machine Learning scikit-learn, OpenCV ML libraries

Embedded Platforms STM32 ARM, EFM32, AVR

DSP Platforms DSK 6713