VIRAJ PRABHU

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Education	Qualification	Year	Grades
Birla Institute of Technology and Science, Pilani	B.E. (Hons.) Computer Science	July 2015 (Expected)	Estimated final GPA: 8.56/10
Sathaye College, Mumbai	HSC (Class XII)	May 2011	81.17%
Smt. Lilavatibai Podar High School, Mumbai	ICSE (Class X)	May 2009	97.28% (School Rank: 1)

Research Interests: My primary research interests lie in employing Machine Learning to solve problems in Computer Vision. I aspire to gain a strong theoretical foundation in both fields to better equip myself to work on challenging research problems. I am also interested in Information Retrieval, particularly Multimedia Retrieval.

Electives Completed: Pattern Recognition, Machine Learning, Parallel Computing, Number Theory, Information Retrieval, Fuzzy Logic and Applications

INTERNSHIPS

Intern, Tonbo Imaging, Bangalore (Jan 2015-June 2015)

Working on the design and development of specialized imaging sensors for defense applications. Present projects aims to automate camera calibration with high accuracy using a specialized target and collimator setup by applying image processing techniques. Also designed and implemented a boresight application on a DM365 processor for aligning firearm barrel and sight.

Summer Intern, (eLearning), Adobe Systems India**,** Bangalore (May 2014-August 2014)

Worked extensively in Computer Vision and allied fields as part of a two member team. Work responsibilities:

- Designed and implemented a novel Grabcut-based segmentation algorithm – 'Keyframe Cut' for real-time background removal and substitution in videos that fused color, motion, shape prior and adaptive background cues. It was developed in C++ as a feature for the e-learning content authoring tool, Adobe Presenter, and demonstrated promising results under reasonable constraints for the background.
- Developed a prototype of a first of its kind preview feedback system to automatically identify poor quality backgrounds.
- Presented demos to the Senior Product Director and researchers at Adobe Advanced Technology Labs, Seattle, and work is currently underway to integrate the feature in the next release of Adobe Presenter. A research paper on our work is currently undergoing internal review as of May '15.

Summer Intern, Orange Business Services, Mumbai (May 2013-July 2013)

Developed a secure web portal to automate customer data log creation for quality assessment purposes. The portal was developed using PHP and MySQL in the back end, and HTML and JavaScript in the front end.

ACADEMIC PROJECTS

- MARS (Music Analysis and Recognition Software): Developed an application that uses a Bayesian classifier trained on spectral characteristics of songs to recognize their genres with good accuracy. This was further extended to auto-equalize songs by genre. Awarded Second prize, Software Design category, APOGEE 2013, BITS Pilani's annual techfest.
- Try-On: Created an application in C# which uses a Microsoft Kinect Camera to find a person's cloth size and enables him to virtually try-on different apparels, using OpenCV and the Kinect's Skeletal Tracking libraries. Awarded Second prize, Design Appliances category, APOGEE 2013.
- Sign Language to Speech Converter: Developed an application that recognizes a vocabulary of ASL gestures and converts them to speech using the Microsoft Kinect, as an aid for the speech impaired. The software learns a Hidden Markov Model from features extracted using Kinect Skeletal Tracking

and OpenCV libraries from training gestures. It then identifies the gesture in non-complex backgrounds with reasonable accuracy; presented at APOGEE 2014, BITS Pilani's annual techfest.

- NewsLine: Jointly developed software for a course project that could crawl and retrieve articles within a user-defined time period from news sources, and perform event-centric Hierarchical Agglomerative Clustering to identify articles pertaining to the same story. The optimal partitioning of the HAC tree is determined by maximizing the silhouette score over all possible partitions. The user can then query for any story and all relevant articles are presented chronologically.
- Speaker Detection using Multiple Kinects (Study Oriented Project under Dr. J.L.Raheja, CEERI Pilani): Developed a multithreaded application for use in teleconferencing that first initializes multiple Microsoft Kinect sensors to cover a field of vision. It then identifies the current speaker and displays only his face on the central display, seamlessly swapping between sensors as different people speak.
- Doc2Wiki: Jointly wrote a JavaScript application that would take as input a well formatted Word document, parse it through OpenXML and create a Wikipedia page by translating it to the Wikipedia format. Presented at APOGEE 2014, BITS Pilani's annual techfest.
- Compiler project: Developed the front and back ends of a compiler in C for a custom programming language as the project component of a course on compiler design.
- Implemented algorithms for different NP-complete problems using a Branch-and-Bound framework and parallelized them using OpenMP and MPI, as part of a course on Parallel Computing.

PROGRAMMING LANGUAGES AND TECHNOLOGIES

C, C++ (Highly proficient), Java, Python, Visual Studio, Eclipse, Linux (Proficient), MATLAB, C#, PHP, JavaScript (Prior Experience)

ACADEMIC ACHIEVEMENTS AND AWARDS

- Awarded Times NIE Student of the year award by Times NIE for years '04-'05 and '07-'08
- Was among the top-200 students out of 1.36 lakh applicants in BITSAT-2011, the entrance exam to the Birla Institute of Technology colleges.
- Awarded Amul Vidya Shree for excellence in Board Exams, year 2009, for ranking among the top-20 in the ICSE exams out of approximately 1.5 lakh students.
- School topper, standards I through X
- Qualified for the Indian National Mathematics Olympiad, 2010

POSITIONS OF RESPONSIBILITY AND EXTRA-CURRICULAR ACTIVITIES

- Was part of a team that stood first in the Google Hackathon in APOGEE 2014, the annual tech-fest of BITS Pilani, for 'Snapify', an Android-based social networking app for rapid sharing of photographs of events with all its attendees.
- Head Boy, Lilavatibai Podar High School, year 2008-2009 - represented the school at all inter and intra-school events.
- Editor, BBC News, International Press, BITS MUN 2013 - Led a team of nearly 20 student reporters, photographers and designers and was responsible for bringing out daily newsletters in the style of BBC to cover the happenings of BITS MUN 2013.
- Member of the English Press Club, BITS Pilani (2011-2015) – Responsible for reporting campus happenings through the newsletter 'The Fine Print', and for conducting literary events during college festivals. Contributed to aspects ranging from content creation to event organization.
- Member of the Department of Sounds, BITS Pilani (2011-2015) - Was responsible for enhancing the auditory experience during live musical performances by renowned artistes on campus, through the use of professional audio equipment.