Aparna PL

Personal Data

Address: Flat No.206, Ananya Appartments, Kodialbail, Mangalore-575003, Karnataka
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Education

2014-Present **Undergraduation**
4^{th} year, B.Tech in **Information Technology** at **NITK, Surathkal, INDIA**
Cgpa: 9.37/10 upto VII^{th} semester

2013-14 **AISSCE**
Kendriya Vidyalaya No.1, Panambur, Mangalore, INDIA
Board: Central Board of Secondary Education
Percentage: 96%

2011-12 **AISSE**
Kendriya Vidyalaya No.1, Panambur, Mangalore, INDIA
Board: Central Board of Secondary Education
Cgpa: 10/10

Experience

May-Dec'17 **SDE Intern at Amazon Development Center, Hyderabad, INDIA**
Worked on Feed Classification Service to improve product classification precision by leveraging the classification of similar products within a seller uploaded file(feed) containing product details. Signals such as text coherence, spatial coherence etc were used to cluster similar products together and improve precision of outlier products for which item classifier may have low confidence score. Offered pre-placement offer for the work carried out.
Mentor: Mr. Shadab Alam

May-Jul'16 **Research Intern at Dept. of Avionics, Indian Institute of Space Science & Technology, Thiruvanatapuram, INDIA**
Implemented a variation of Non-Local Means filter by incorporating maximum likelihood based weights to denoise Digital holographic interferometric fringes which helps in better phase estimation.
Publication: Presented research paper based on the work carried out at CVIP-WM 2017
Mentors: Dr. Gorthi Subrahmanyam and Dr. Deepak Mishra

Selected Academic Projects

Jan-Apr'17 **Topic Modelling for Content Based Image Retrieval**
Topics were extracted from images using statistical inference process of Latent Dirichlet Allocation. The topic distributions of images obtained were compared with the query image using Eucledian distance and Cosine similarity to rank and display the most relevant images to the user.

Jan-Apr'17 **Dictionary Learning for Content Based Medical Image Retrieval**
An application developed in Python to retrieve similar X-ray images to the input query using clustering. Dictionary for each cluster was learnt using K-SVD, sparse coding for each image was obtained using Orthogonal Matching Pursuit and images were clustered using the idea that similar images have decomposition in terms of similar dictionary atoms.

Aug-Nov'16 **Search Engine Vector Voting (SVV)**
A meta-search engine developed with Python, HTML, PHP, JavaScript to get search results from 4 search engines using BeautifulSoup library for a given query and present the results to the user along with their relevance and vote distribution across the search engines.

Aug-Nov'16 **Tracking in public procurement system**
Public procurement involves inter departmental file movement and multiple approvals involved. In view to improve overall procurement cycle, a web application to track status of a procurement order placed by a user group was developed. Database was created with MySQL and normalized upto 3NF. Front-end was designed using HTML, CSS, JavaScript, PHP.

Aug-Nov'16 | **Parallelizing image processing algorithms**
Parallelized Otsu's segmentation algorithm, Sobel's edge detection algorithm and Gaussian blurring in Python using PyMP. Compared speedup performance after parallelizing in C (using OpenMP) and Python (using PyMP).

Jan-Apr'16 | **Image Search**
An application developed in Python with OpenCV's Python interface to search from the database and display similar images to the one input by user. SIFT key point matching algorithm was used for similarity detection between images.

All project codes available on https://github.com/lapa19.

Publications

2017 Aparna PL, Rahul Waghmare, Deepak M, Sai Subrahmanyam RK Gorthi, "Effective Denoising with Non-local Means Filter for Reliable Unwrapping of Digital Holographic Interferometric fringes", International Conference on Computer Vision and Image Processing' (CVIP-2017), IIT Roorkee, Sept. 2017.

Skills

Languages:	C, C++, Java, Python, MATLAB, HTML, CSS, JavaScript, PHP
Databases:	SQL, DynamoDB
Tools/Frameworks/Libraries:	LaTeX, STL, OpenCV, OpenMP, PyMP, MySQL, Spring framework, Google Guice

Relevant courses

Soft Computing, Information Retrieval, Software Engineering, Linear Algebra and Matrices, Parallel computing, Database systems, Automata and compiler design, Web technologies and applications, Data Structures and algorithms, Paradigms of Programming(Java), Unix programming, Graph theory and probability, Design and analysis of algorithms, Operating systems, Computer communication and networking, Information systems, Object oriented analysis and design

Areas of interest

Computer Vision, Machine learning, Image processing

Achievements

2016 Led a team of 4 undergraduates for Code.fun.do, a week long hackathon conducted by Microsoft and developed an Android app for child birth registration in India using Micrsoft Azure for backend which went on to secure the 2^{nd} place in college.

2015 Secured rank 162 out of 1069 teams across the world in Women's Cup (Coding competition) organized by HackerRank in October 2015, was awarded a T-shirt for the same.

2014 Secured 96% in AISSCE-2014, was awarded merit certificate and cash prize by Kendriya Vidyalaya Sangathan(KVS) for being in top 1.5% of all Kendriya Vidyalayas across India.

2014 Was in top 0.5% of the country in both IIT-JEE and JEE-Mains, the entrance exams to some of the prestigious colleges in India.

2012 Secured 10/10 CGPA in AISSE-2012, was awarded merit certificate and cash prize by KVS.

Extra-Curricular

- Member of Comps Committee at Engineer'16, the annual tech-fest at NITK as one of the problem setters for Inscription'16, an online programming contest.
- Executive member at Web Enthusiasts' Club at NITK. WebClub is actively involved in holding talks, discussions, workshops and coding contests over the past few years.
- Participated in ACM-ICPC Asia Amritapuri and Kolkata regional sites' First Round in 2015.
- Actively participted in many school-level painting, singing and debate competitions.