Curriculum Vitae

PERSONAL INFORMATION

Tarun Kumar Vangani

2152, Malviya Bhavan, BITS Pilani, 333031 Pilani (India)

+91 946 097 3751

f2013817@pilani.bits-pilani.ac.in

reachtarunhere.github.io

EXPERIENCE

12/2015 – Present

Research Intern

Machine Vision Lab, CSIR - Central Electronics Engineering Research Institute, Pilani

Project : Skeleton-tracking-based Human Action Recognition Using Deep Neural Networks

Mentor : Dr Jagdish Lal Raheja, Senior Principal Scientist. Machine Vision lab, DSG, CEERI

This is an ongoing project aiming to develop a activity recognition system that receives as input, depth map data stream using a Kinect sensor. The algorithm incorporates both color and depth information, without specific requirements on uniform-colored or stable background. Recognition is realized using Deep Neural Networks (DNNs) from skeletal data.

05/2015 – 08/2015

Google Summer of Code Student

The Honeynet Project. Awarded fellowship worth $5,500.

Mentor : Mr. Pietro Delsante

- Developed Rumāl - A tool that acts as a meta-data enrichment tool and Web GUI supporting visualizations for Thug's output and helps finding correlation in results.
- Rumāl can support multiple sites from a common back-end and can be modified to support parallel processing.
- Made use of Third party APIs from VirusTotal and GeoIP to enrich data.
- Implemented a REST API using django-tastypie framework.
- Implemented interactive graph visualization of the nodes visited by Thug using D3.js
- Using abc module developed a Plugin Engine for Rumāl that makes it easy to add custom community based plugins to the enrichment data.

05/2015 – 07/2015

Summer Intern

Centre for Development of Imaging Technology, Trivandrum

Mentor : S. Gopakumar, Vice Chair,Member & Geographic Activity IEEE

- Developed a complaint resolution portal for the products and services of C-DIT.
- The back-end was written in PHP & MySQL and a custom admin panel was also provided.
- The system generates automatic notifications and mails directed to concerned authorities.
- A basic algorithm that prioritized issues by severity was also implemented.
- This project became a part of the both the in-house and public bug-filing system at C-DIT.

EDUCATION AND TRAINING

2013–Present

B.E. (Hons.) Electronics and Instrumentation, M.Sc. (Hons.) Biological Sciences

Birla Institute of Technology and Science Pilani, Pilani (India)

Online Courses/ MOOCs

- Introduction to Machine Learning - (Udacity)
- Introduction to Computer Vision - Georgia Tech (Udacity)
- Artificial Intelligence for Robotics - Georgia Tech (Udacity)
- Statistical Learning (*Ongoing*) - Stanford-Lagunita

Skills

- **Languages**: Python, MATLAB/Octave, C/C++, JavaScript
- **Libraries/Frameworks**: OpenCV, scikit-learn, NLTK, Django, jQuery, D3.js, Web2py
- **Databases**: MySQL, MongoDB
- **Misc**: Git, Shell Scripting, Linux System Administration

PROJECTS

Smart E-Mail Classifier

- Decides folders for emails in an inbox automatically according to the categories learned on the basis of similarity between mails - based on their subject, sender and contents.
- Text from existing emails was first tokenized which was then followed by stemming and stop word removal. In the end term frequency-inverse document frequency weighting was used to assign weights to the words.
- Uses Hierarchical Agglomerative Clustering to cluster emails into categories dependent on inbox (not pre-decided categories).
- This project won the second prize in Project Presentation in the Annual Technical Festival of at BITS Pilani (Apogee)

Exploring Automation in Online Biological Tools

- A bot was implemented using Selenium Testing Tools to submit and retrieve data from website of National Center for Biotechnology Information.
- Auxiliary scripts were written to clean the data obtained and present it in the desired form (Plots and Excel Sheets)
- An attempt was made to combine data from miRBase (database for micro RNA's) and miRDB (db of target genes microRNA) to help categorizing Micro RNA on the basis of targets.

Discoverify

- A webapp where users were allowed to register and make learning paths (An array of steps required to master some material. Example: JQuery)
- Authors of path could link to other sites as resources for each and categorize them and add a suggested time to complete the step.Other users (with or without registration) were allowed to view the learning path.
- Discoverify was an entry for a 24 hour Hackathon at Jaipur and also won a consolation prize.

Fest Registration Software

- The software was made to be used for registration of participants for the Annual Cultural, Sports & Technical Festivals at BITS Pilani.
- The online version of this software allows leaders from the visiting contingents to manage their member's events and contact details . After approval by administrators a mail is generated with a unique barcode.
- Once on campus, participants are allotted rooms and billed with the help of the software using the unique barcode.
- The software till date has been used for more than 2.5K successful registrations.

OTHER INFORMATION

- Member of Students Council for Cultural Activities, a seven member body responsible for decisions regarding budget, planning, events and professional shows for the fest.
- Developed websites for college fests. bits-oasis.org, bits-apogee.org, bits-bosm.org
- Code for my projects is available at http://github.com/reachtarunhere