**TARUN KUMAR**
MALE, 20 YEARS
**B.E. (Hons) Electronics & Instrumentation** (2013-2018)
**M.Sc. (Hons) Biological Sciences, BITS Pilani** (2013-2018)

## EDUCATION

| Board | Year | Institution | Score | Rank |
|---|---|---|---|---|
| CBSE (Class XII) | 2013 | Cambridge Court High School, Jaipur | 90% | 8/110 |
| CBSE (Class X) | 2011 | Mayoor School, Ajmer | 10 CGPA | 1/150 |

## INTERNSHIPS

**Google Summer of Code Student,** The Honeynet Project                    May 2015-Aug 2015
Guide: Mr.Pietro Delsante -  Incident Response Team at CERTEGO

GSoC –Google Summer of Code is a global program that offers students stipends to write code for open source projects.

• 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.

Project Repository: https://github.com/reachtarunhere/rumal

**Summer Intern,** Centre for Development of Imaging Technology , Trivandrum, Kerela                    May 2015-June 2015
Guide: Mr. S. Gopakumar, Vice Chair (Information Management) IEEE, Member & Geographic Activity

C-DIT – An organization established in 1988 by the Government of Kerala for advancement of research, development and training in imaging technology with an implied role in socially relevant science & development communication.

• 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.
   o This project became a part of the both the in-house and public bug-filing system at C-DIT.

**Research Intern**,** Central Electronics Engineering Research Institute, Pilani                    Dec 2015-Jan 2016
Guide: Dr Jagdish Lal Raheja, Senior Principal Scientist. Machine Vision lab, DSG, CEERI, Pilani

This winter  I will we interning at Central Electronics Engineering Research Institute,Pilani under guidance of Dr. Raheja where we will explore use of deep learning in hand gesture tracking implementation.Along with one more intern I will be working on the project "Application of Deep Neural Networks to a Hand Gesture Recognition System using Kinect"

**\*\*NOTE**: This internship has not started yet. The work will start in December 2015.

## 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**:
Guide: Dr. Shibasish Chowdhury, Associate Professor, BITS Pilani

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** (Learning Resources Aggregation Tool):

• 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.
• The back-end was implemented on django framework.

**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.

## SKILLS

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

## POSITIONS OF RESPONSIBILITY

• **Joint Coordinator,** Department of Visual Media(previously known as Dept. of CCTV)/60+ inmates
Manage the work for the department which includes development of the websites, registration portals, payment gateways and promotional animation videos for the sports, cultural and technical fest of BITS

## OTHER INFORMATION

Developed websites for college fests. bits-oasis.org, bits-apogee.org, bits-bosm.org
Worked on many web-apps as personal projects and as a free-lancer.
Code for my projects is available at  http://github.com/reachtarunhere
LinkedIn https://in.linkedin.com/in/tarunkv