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Abhishek Singh

AREAS OF INTEREST

Machine Learning, Algorithms, Information Retrieval

EDUCATION

MS in CSE (2015 - 2017)	**International Institute of Information Technology**, *Hyderabad*, India.
Bachelor of Technology (2010 - 2014)	**B.Tech. in Computer Science and Engineering**, *Amrita Vishwa Vidyapeetham, Kerala, India.* CGPA: 8.31/10
Higher Secondary CBSE (2009)	**Central Academy**, *Rajasthan, India.* *Percentage: 81.2%.*
Secondary CBSE (2007)	**R.P.S Public School**, *Bihar, India.* *Percentage: 92.7%*

EXPERIENCE

Full Stack Developer, Credii (July, 2015)

Implemented a full fledged domain lookup tool that returns domain of a company given name of the company as input. Information extraction through crawling and scrapping. Worked on product recommendation system.

Technologies: Ruby, Rails, Python, Redis

Teaching Experience

Technical Trainer, Amrita University (July, 2014 - May, 2015)

Mentored undergraduate students to learn new programming languages and various FOSS technologies. Helped these students to make contributions to open source projects.

Learn IT Girl (Nov, 2014 - Feb, 2015)

Mentored a Romanian student to learn Python, Django and Postgres. She eventually created a web application. This web application help people find the best local dealer to repair their malfunctioning electronic gadgets.
Reference: https://sites.google.com/site/learnitgirl/home

Internship

Google Summer of Code(GSoC) 2014 (May, 2014 - August, 2014)

Worked for a virtual reality project of Italian Mars Society(IMS). Integrated the full body and hand gesture tracking of astronauts to the European MaRs Analogue Station(ERAS) virtual station, which enables an astronaut in the real world to control their avatar in the virtual world through body and hand gestures.

Environment: Linux, Python, C++, Kinect Xbox sensor, Blender, Tango, Sphinx, Visual Python

Reference: https://bitbucket.org/italianmarssociety/eras

Website and Pariksha application for Amrita FOSS Club

Developed a website for FOSS club at Amrita using Python, Django, Bootstrap, HTML, CSS. Also created a web application for conducting online exams.

SELECTED PROJECTS

Wikimon: A Search Engine for Wikipedia

Description	Implemented a efficient and scalable search engine from scratch for the whole wikipedia dump. Supports normal as well as phrase based query.
Environment	*Python, Cython, NLTK*
References	open sourced at https://github.com/AbhishekKumarSingh/wikimon

Image classification

Description	Implemented a Random forest and ferns based image classifier on caltech dataset as a part of course project.

Person Recognition System(PRS)

Description	Implemented a PIS which is based on a 3D face recognition approach. The system recognizes a person by matching his/her features through a database. Solves many problems of 2D face recognition and has an accuracy of 94%.
Environment	*C#, OpenCV, Windows, Kinect sensor*

Page ranking based search result

Description	Implemented a mechanism for the search engine for a project used by Amrita Technologies for Business Incubator(ATBI) that uses page ranking method to return search results.
Environment	Python, Linux

Trident Shell

Description	Developed a shell compatible with Linux and Mac OSx. This open source software is currently under the Copyright process. Features implemented are tab auto-completion, history, support for the pipe command, Input/Output redirection, background processes, all external and shell built-in commands, added color to the output of some of the commands such as ls, grep, fgrep and egrep.
Environment	*C++, Unix*
References	open sourced at https://github.com/AbhishekKumarSingh/Trident

Emanio To-do list

Description	Implemented a simple to-do list. Features Implemented are ease-of-use, emotions and text formatting using bold and italic button.
Environment	*JavaScript, HTML, CSS*
References	open sourced at https://github.com/AbhishekKumarSingh/emanio

Algorithms' Implementations

Description	Effectively implemented variety of algorithms such as elementary sorting algorithms, advanced sorting algorithms, selection algorithms, different data structures and many more.
Environment	*C, C++*
References	details at https://bitbucket.org/abhisheksingh/algorithms

Open Source Contribution

Organization	**Fedora**

Description	Worked on writing **test suites** for **SSSD** that is a process which helps the system identify and authenticate remote users, local users and remote resources. Learned concepts of memory management library(**Talloc**) and event-driven programming (**Tevent**). Implemented tests for finding the user id and Input/Output module with **85** percent coverage. Also fixed some bugs.
Environment	*C, Cmocka unit testing framework, Unix, Git*
References	open sourced at https://github.com/AbhishekKumarSingh/sssd/

Organization	**Mozilla**
Description	Worked on expanding unit tests for **mozbase** with better code coverage. Mozbase provides utilities like Input/Output, basic networking, etc. Implemented unittest for the moznetwork module. Moznetwork is a utility that is a part of mozbase. It provides basic network functionality.
Environment	*Python, Unix, Pep8, Pyflakes, Git*
References	open sourced at https://bitbucket.org/abhisheksingh/mozbase

Organization	**Tor**
Description	Improved automated tests for Stem. Stem is a Python controller library that allows applications to interact with Tor. This project dealt with sanity checks and cleanup of the source code. Fixed and reported some major bugs.
Environment	*Python, Unix, Git*
Reported bug	https://trac.torproject.org/projects/tor/ticket/8157 https://trac.torproject.org/projects/tor/ticket/8271
Fixed bug	https://trac.torproject.org/projects/tor/ticket/7926

Organization	**MoinMoin***(March 2012)*
Description	Improved the code for user settings and user registration by performing sanity checks and clean-up of the source code. Fixed and reported some major bugs.
Environment	*Python, Unix, Mercurial*
References	open sourced at https://bitbucket.org/abhisheksingh/moin-2.0

Organization	**Mozilla**
Description	Improved code quality by removing unsupported features. Conducted effective testing and sanity checks on the source code. Fixed bugs and submitted patches for the code.
Environment	*JavaScript, HTML, CSS*
References	Fixed bug: https://bugzilla.mozilla.org/show_bug.cgi?id=650322 https://bugzilla.mozilla.org/show_bug.cgi?id=699041

Organization	**Ubuntu**
Description	Removed unwanted features from the code that were present in the bash-completion package.
Environment	*launchpad, Bazaar, Scripting*
References	sourced at https://bugs.launchpad.net/ubuntu/+source/bash-completion/+bug/818475

COMPUTER SKILLS

Operating Systems	GNU/Linux, Windows	**Programming Languages**	C, C++, Python, C#, Java(basic), SQL
Script Languages	Bash shell scripting, JavaScript	**Web Development**	HTML, CSS, JavaScript, Django

Version Control Systems	Git, Mercurial and Bazaar	Automation Tools	Pytest, Python unit-test framework, Cmocka-unit testing framework
Code Coverage Tools	Coverage, Figleaf	Others	Test disk, Photorec, Valgrind, Sphinx

Scholastic Achievements

- Selected for the prestigious **GSoC** (Google Summer Of Code)2014 program.
- **Certificate of Appreciation** from my university for achievements in academics and FOSS (Free Open Source Software) during 2013-2014.
- Listed as one of the **top contributors** of SSSD (System Security Service Daemon) - one of the popular open source project.
  Reference: https://launchpad.net/sssd
- 1st rank in **Hack The Shell** (shell scripting) event conducted by **Vortex** at **NIT** (National Institute of Technology) Trichy, India.
- 2nd rank in **Crack The Shell** (shell scripting) event conducted by **CSI (Computer Society of India)** Kerala State Student Convention at Thangal Kunju Musaliar College of Engineering, Kerala, India.
- **Certificate of Accomplishment** for successfully completing **Software Testing (CS258)** course with final tests conducted by Udacity. Udacity hosts some professional courses.
- Awarded with 'Certificate of Merit' from the CIR (Corporate and International Relations) department at Amrita Vishwa Vidyapeetham. This certificate was awarded for an outstanding SSR (Student Social Responsibility) project.
- Graded **3.7** out of **4** in **NCSA** (National Computer Science Academy) **JavaScript Certification** exam.
- Our team ranked 9th out of more than about 100 teams in **SCTF, Capture The Flag** hacking contest (August,2012).
- Honoured with the **proficiency prize** during 2010 for academic excellence.
- **Best Student** award for getting highest marks in a **Maths** exam conducted by **Rachna Sagar Pvt. Ltd.** which is one of the top textbook publishing companies.

Demonstrated Personal Skills

Analytical	Designed and implemented the Trident shell(basic shell). Analysed the requirements for the shell in great depth.
Fast Learner	Quickly learned and implemented many algorithms.
Communication skills	Addressed approximately 700 people during a health campaign organized as a part of 'Student Social Responsibility project'.
Leadership	Took up leadership roles in all academic and extra-curricular activities. I was one of the student co-ordinators for an event where a crowd of about 0.2 million was present. We managed the crowd successfully without any negative incidents.

Conference, Papers And Publications

- Published tips on 'Recording of terminal session' in November 2013 in OSFY(Open Source For You) magazine. This magazine is a very popular open source magazine.

Activities

FOSS Club	An active member of Free and Open Source Software Club. Mentored many junior students learn new technologies.
Volunteering	Took part in various city cleanup drives.

Personal Details

D.O.B	13th April, 1992
Languages	English, Hindi
Blogging	http://abhisheksingh01.wordpress.com.

References

Shall be produced upon request