

Anand Soni

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Education

2011–2015 **Bachelor of Technology, Computer Science and Engineering, IIT Bombay, Mumbai, India.**

GPA: 7.35/10.0

Professional Experience

- May 2014–August 2014 **Google Summer of Code, Mlpack : A C++ machine learning library.**
- Improved the existing automatic benchmarking framework by implementing new performance metrics for various classification algorithms. Implemented one vs. all technique to convert multiclass classifiers into binary classifiers
 - Developed a **Bootstrapping framework** in Python and d3.js to rank and compare the performance of various other machine learning libraries like Scikit and Matlab with MLPack
- May 2014–July 2014 **Intuit India Product Development Center, Bangalore, India.**
- Worked as a part of the Intuit Data Services team for the development of an error analysis and tracking tool for the QuickBooks Desktop care team
 - Developed REST based end points using Jersey and Splunk APIs. Integrated the end points with a user interface developed using AngularJS.
 - Ideated and developed **QUANT (QuickBooks Analytics Tool)** for the small businesses to grow based on their current business, customers and competitors data, during Incubation Week at Intuit IDC, Bangalore.

Research Experience

Undergraduate Thesis - I,

Guide : Prof. Umesh Bellur, CSE, IIT Bombay, Autumn, 2014.

- Worked on the experimental comparison of various live migration optimization techniques
- Implemented a framework to analyze memory dumps obtained during migration for amount of dirtiness and existence of duplicate pages
- Implemented an optimization over the pre-copy approach which uses the merge sort algorithm to sort page groups based on their dirty counts

Undergraduate Thesis - II,

Guide : Prof. Umesh Bellur, CSE, IIT Bombay, Spring, 2015.

- Worked on the empirical evaluation of Light Weight Containers (LWCs) vs. Virtual Machines (VMs) on the grounds of shared memory usage and under various workloads
- Currently, working on solving the problem of data center evacuation (VM migration) given a topology and a deadline
- Implemented a Linear Programming solution to determine the rates at which each VM should be migrated, given the deadline. Simulated the migration of Virtual Machines in the given data center topology

Publications

IEEE- CLOUD, 2015, USA **On Exploiting Page Sharing in a Virtualised Environment - an Empirical Study of Virtualisation Verses Lightweight Containers**

Key Academic Projects

Simulation of Virtual Memory and File System, Operating Systems Lab,

Guide : Prof. D M Dhamdhere, CSE, IIT Bombay,

Spring, 2014.

- Simulated the virtual memory organization in C. Implemented the page management and page replacement policies, allocation of physical memory, page tables and page faults
- Also simulated the basic features of a file system to create, move and delete files and directories

Twitter Sentiment Analyzer, Artificial Intelligence Lab,

Guide : Prof. Pushpak Bhattacharya, CSE, IIT Bombay,

Spring, 2014.

- Developed a Twitter sentiment analyzer to classify tweets as positive, negative and neutral
- Implemented and trained a Fast-forward Neural Network with the backpropagation algorithm and a marked corpus of tweets

Travel Planner Webapp, Database and Information Systems Lab,

Guide : Prof. Umesh Bellur, CSE, IIT Bombay,

Autumn, 2013.

- Developed a Java webapp with PostgreSQL database for group and individual tour plannings
- Worked with a large data of all the cities, states and countries of the world

Data Compression System, Data Structures & Algorithms Lab,

Guide : Prof. Varsha Apte, CSE, IIT Bombay,

Autumn, 2012.

- Implemented the Lempel-Ziv (LZ77) and the Run Length Encoding algorithms to compress files
- Achieved 45% compression for text, 80% (monochrome) and 50% (colored) compression for images

Graphical Application in PLT-Scheme, Abstractions & Paradigms Lab,

Guide : Prof. Amitabha Sanyal, CSE, IIT Bombay,

Spring, 2012.

- Developed two-player Chess implementing the Object Oriented Paradigm of programming
- Designed and implemented algorithms for all special moves like Castling and Pawn promotion

Awards and Achievements

IIT JEE, 2011	Qualified in 2011 and ranked among the top 0.2% of the 5,00,000 (approx.) candidates appeared
AIEEE, 2011	Qualified in 2011 and ranked among the top 0.1% of about 10,50,000 candidates appeared
Intuit IDC, Bangalore, 2014	Awarded the Intuit Spotlight Award for an exceptional performance during the summer internship. Offered a full time position (Pre Placement Offer) in recognition of my performance
ACM, US, 2014	Offered student membership and access to the ACM Digital library
Scholarship	Recipient of the IIT Bombay Institute MCM scholarship
Academics	Awarded an AA grade (highest grade) in my first Undergraduate thesis

Miscellaneous Work

Open Source	Contributed to Mozilla QA by fixing various bugs and submitting patches. Actively contributing to the Open Source community
Hackathon	Developed a TxtWeb SMS application to get live updates of the FIFA world cup, 2014 during a hackathon organized at Intuit IDC, Bangalore
Seminar	Presented a seminar on "Kalman Filters in Robot Localization" to the class as a part of the Artificial Intelligence course, under guidance of Prof. Pushpak Bhattacharya, CSE, IIT Bombay

Technical Skills

Languages C, C++, Java, Python, Matlab, HTML, CSS
Technologies MySQL, PostgreSQL, \LaTeX , Bash Scripting, Git, Vim, Bootstrap, AngularJS, BeautifulSoup
Operating Systems Linux, Windows, OS X

Extra Curricular Activities

Community Work Volunteered as a student organizer and helped in managing logistics for a district level **Polio Corrective Surgery Camp** organized by the **Rotary International**
Literary Arts Served as the **Literary Prefect** in my senior secondary school for a year. Conceptualized English extempore speaking and writing competitions. Published several articles in school magazine Renaissance
Techfest, IIT Bombay Worked as a coordinator for the publicity of Techfest, the annual technical festival held at IIT Bombay
Hobbies Programming, Travelling, Reading, Writing, Running