

Anil Shanbhag

CONTACT INFORMATION	104, 4th Main, Income Tax Layout, Vijaynagar, Bangalore 560040, India	E-mail: anilshanbhag@gmail.com Home: www.cse.iitb.ac.in/~anil/ Mobile: +918879261822
RESEARCH INTERESTS	Database Systems, Big Data Management, Data Mining and Machine Learning	
EDUCATION	Indian Institute of Technology <i>Bachelor of Technology (Honors)</i> <ul style="list-style-type: none">• Major: Computer Science and Engineering• Minor: Applied Statistics and Information• CGPA: 9.54/10.00• Ranked 4th out of total 89 students in the department	<i>July 2010 - Present</i>
ACADEMIC HONORS	Secured 10.0/10.0 GPA in 6th semester (Spring 2013) Secured All India Rank 38 in IIT-Joint Entrance Exam (2010) among 400,000 students Secured Rank 1 in Karnataka Common Entrance Test (2010) among 150,000 students. Felicitated by Education Minister, Govt. of Karnataka for the same. Selected in national top 1% in <i>Indian National Physics Olympiad, 2010, Indian National Chemistry Olympiad, 2010</i> and <i>Indian National Astronomy Olympiad, 2010</i> Recipient of the <i>Kishore Vaigyanik Protsahan Yojana (KVPY)</i> fellowship, 2008-2010; awarded only to top 125 students from all over the country	
RESEARCH EXPERIENCE	Bachelor's Thesis, IIT Bombay <i>Optimizing Join Enumeration in Rule-based Query Optimizers</i> <ul style="list-style-type: none">• Exploring the space of all equivalent cross-product free join trees in rule-based query optimizer leads to generation of an exponential number of duplicates• Proved inefficiency of existing rule sets in exploring the search space• Formulated a new rule set which generates number of duplicates linear in the size of search space. Currently working on using Graph-based enumeration techniques in rule-based optimizers to generate the space exactly without duplicates	<i>Ongoing</i> S. Sudarshan
	Internship, Microsoft Research (MSR), Redmond <i>Quickr: Approximating Big Data Queries</i> <ul style="list-style-type: none">• Worked on application of sampling-based techniques for <i>Approximate Query Processing</i> in <i>Big Data</i> context.• Existing work focused on simple queries and specific workloads, the goal was to generalize and approximate complex jobs where possible.• Designed an automatic sampler stage insertion algorithm for SCOPE queries and a novel runtime stratified sampling algorithm for distributed one pass sample generation. Implemented the algorithms into SCOPE compiler and completed preliminary analysis	<i>May-July 2013</i> Srikanth Kandula
	Internship, TU-Braunschweig, Germany <i>RDF Provisioning for the Internet of Things</i>	<i>May-July 2012</i> Sandor Fekete

- Worked on bringing wireless sensor nodes into the Internet of Things by having embedded tuplestore for RDF data storage on the nodes and interacting with outside world via Constrained Application Protocol (CoAP)
- Implemented CoAP protocol for communication between sensor nodes in Wiselib and integrated the setup as a backend into Smart Service Proxy of the **EU SpitFire Project**

KEY PROJECTS

Convex Optimization Course Project

Oct-Dec 2013

Rule Learning using Boolean Compressed Sensing

Ganesh Ramakrishnan

- Studied application of Boolean Compressed Sensing in learning sparse boolean rule-sets on datasets with discrete and continuous features. Experimented with various screening tests for reducing the number of rules considered during optimization.
- Implemented the primal-dual interior point method for solving the optimization problem and compared performance with implementation in CVXOPT software.

Machine Learning Course Project

Oct-Nov 2013

Accelerometer as Biometric

Sunita Sarwangi

- Project was a Kaggle research competition designed to investigate the feasibility of using accelerometer data as a biometric for identifying users of mobile devices.
- Designed intelligent features and used Support Vector Machines, Random Forests method to achieve an AUC of 0.928 (one of the highest) without using data leaks.

Operating Systems Course Project

Feb-Apr 2013

File System Implementation in OS 161

Dhananjay Dhamdhare

- Designed and developed a fully functional file system having its own data block allocation scheme, directory structure, cache, unix style permissions and system calls to use the same in OS 161

Databases and Information Systems course project

Sept-Nov 2012

Course Rank

N.L.Sarda

- Course Rank is a social course planning tool to help students make informed choices about classes. Implemented features like course comparator, planner, grading statistics on top of the university schema

Data Structures Course Project

Sept-Nov 2011

Titanis: Web Search Engine

Varsha Apte

- Built a small scale web search engine with reverse index and **PageRank** on a dump size of 1GB. Created a web interface in web.py framework by creating python bindings for the C++ core

TEACHING

Undergraduate Teaching Assistant

July-Dec 2013

Course: Computer Architecture

Bernard Menzes

- Part of 6 member team that assisted the professor in conducting the course lab and solving students' queries regarding material thought. Designed an assignment to figure out properties of different levels of cache using experiments

WORK

EXPERIENCE

Lead Developer, Recharge123.com

2011 - 2012

- Recharge123 is an online recharge portal which provides a unified interface for mobile and DTH recharges

- Developed a robust backend to support 3 level hierarchical (Admin, Distributor, Merchant) model
- The portal targeted at merchants had a turnover of over **INR 10 million** in the first year of operations

Google Summer of Code 2011

May-Aug 2011

Dashed Border Implementation

Fantasai (Org: Mozilla)

- Improved border corner rendering and interaction of dashed style with other border styles
- Designed and implemented variable gap length rendering logic for rendering dashed borders allowing smooth corner transitions. Prototyping done in python followed by patching the source code.

POSITIONS OF RESPONSIBILITY

Manager, Web and Coding Club

2012 - 2013

- Overall Coordinator of one of the largest student clubs with over **1200 members**. Organized **14 events** consisting of a good mix of sessions, competitions and workshops on different programming topics
- Promoted coding as a hobby and a necessary academic skill by creating an informal engaging environment

Institute Cultural Web Nominee

2011 - 2012

- Organized cultural activities on IIT-B campus as a part of the 11 member core team
- Created a new **responsive Gymkhana Cultural website**. New initiatives included **online noticeboard** to give over **6000 students** daily cultural updates and separate sites for different genres in cultural

EXTRA-CURRICULAR ACTIVITIES

Awarded **Institute Technical Color** for the year 2012 - 13 for outstanding work in the tech genre; awarded to 7 out of 7000 total students

Secured 31st position at the Asia Regional Finals of ACM-ICPC 2012 (Amritapuri). Secured 10th position in Asia Regionals Online Round 2013 (Kharagpur).

Secured **1st** place in **Yahoo HackU '12** for developing DriveStack, a cloud based utility app which unified various cloud storage services into one large cloud disk, thereby easing management of storage

Secured **2nd** place in **Yahoo HackU '13** for developing Time Glider, a visualization app which finds all mentions of a famous person or event (**entity search**) in news articles and shows them on an interactive timeline

Developed **Dictanote**, a rich text editor with multi-language speech recognition working in browser. The app currently has over **80k users** and lives at dictanote.co

Finalist in Business Track in Eureka Business Plan Competition for our idea PeaPod, an affordable computer

Created Singing Electric Arc (plasma speaker) as a part of Technovation. The device used modulated electric arcs generated using high voltages to play music from mobile phone

Awarded NSS Special Mention for contribution towards social activities. Facilitated cloth donation drive and organised rubix cube solving workshop at campus school for the under privileged students

REFEREES

Professor S. Sudarshan

Head of Dept. (CSE)
IIT Bombay
Mumbai, India
phone: *available on request*
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Dr. Srikanth Kandula

Researcher
Microsoft Research
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Professor Soumen Chakrabarti

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Professor Bernard Menzes

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