

Research Interest	I am currently pursuing research in the area of Holistic Optimization of Database Applications. <i>This involves bringing together ideas from traditional database query optimization, program analysis and compiler optimization, in order to optimize database applications, bridging the gap between the query language and the programming language.</i>		
Education	Indian Institute of Technology Bombay	2009 - present	
	PhD in Computer Science	Advisor: Prof. S. Sudarshan	
	BMS College of Engineering, Bangalore	2000 - 2004	
	Bachelor of Engineering in Information Science	Graduated with aggregate 83.11	
Publications	Holistic Optimization by Prefetching Query Results	SIGMOD 2012	
	Authors: Karthik Ramachandra, S. Sudarshan		
	Program Transformations for Asynchronous Query Submission	ICDE 2011	
	Authors: Mahendra Chavan, Ravindra Guravannavar, Karthik Ramachandra, S. Sudarshan		
	DBridge: A Program rewrite tool for set oriented Query execution	ICDE 2011	
	Authors: Mahendra Chavan, Ravindra Guravannavar, Karthik Ramachandra, S. Sudarshan		
Workshop publications	Program Analysis and Transformation for Holistic Optimization of Database Applications	ACM SIGPLAN SOAP 2012 (in conjunction with PLDI'12)	
	Authors: Karthik Ramachandra, Ravindra Guravannavar, S. Sudarshan		
Work Experience	Microsoft Gray Systems Lab	Intern	
	Madison, Wisconsin	Oct 2012 - Jan 2013	
	I have worked on the Polybase project, building a prototype for the subsequent phase of the product, under the guidance of Dr. David DeWitt and Srinath Shankar.		
	ThoughtWorks Inc	Senior Consultant	
	Bangalore, India	July 2004 - July 2009	
	I have been part of, and led teams starting from project inceptions to delivery and hand over, in various domains. The core work involved analyzing requirements, designing and developing software, providing technology consulting w.r.t OO design and distributed systems design, applying innovations to real world software.		
	TATA Elxsi Ltd.	Intern	
	Bangalore, India	Summer 2004	
	Tata Elxsi is the product design arm of the Tata group, focused on delivering outsourced product R & D services and solutions to customers worldwide. As an Intern, I designed and developed a Fingerprint Authentication System in C as part of my Bachelors course.		
Awards & Fellowships	Microsoft Research TechVista PhD poster presentation (1st place)	2012	
	http://research.microsoft.com/en-us/events/techvista2012/		
	Microsoft Research India PhD Fellowship	2011	
	http://research.microsoft.com/en-us/collaboration/global/india/phdfellowships.aspx		
	Yahoo Key Scientific Challenges award	2011	
	http://www.labs.yahoo.com/ksc		
Talks	International Conference on Management of Data(COMAD)	Dec 2011, Bangalore	
	Talk: Program Transformations for Asynchronous Query Submission Demonstration: DBridge: Holistic Optimization of Database Applications		
	Conference: Erlang Exchange	June 2008, London	
	Talk: Load Testing of Web Applications using Erlang		

Event: ThoughtWorks Team Hug 08

April 2008 - Gold Coast, Australia

Talk: Erlang and the real world

Ugenie Ltd,(now part of Lulu.com)

April 2008, Bangalore

Talk: Concurrency & Erlang

Articles

Holistic Optimization

July 2011

Technology Review India (MIT's Magazine on Innovation): From the labs

Load Testing WebApps made easy with Erlang

Jan 2008

ThoughtWorks Innovation Newsletter

Erlang: Software for the real World

April 2008

The SmartTechie magazine

Other Projects

PerfERL

PerfERL is a Distributed Load testing/ Performance testing tool written in Erlang. It can achieve high scalability due to its inherent distributed and fault tolerant nature. It has been used in testing a few real world applications.

Eclisp (part of the JInterpreter project)

The best way to learn how interpreters and runtime environments work is by actually attempting to write one. This is a lisp interpreter and runtime environment written in Java. Built using SICP as the reference book.

FirewallDSL

A Domain Specific Language (DSL) for specifying iptables rules for firewall configurations built in Ruby. It generates iptables rules based on an Englishlike specification of the rules.

Skills

Programming Languages: Java, SQL, Ruby, Erlang, C++, Lisp

Libraries and Tools: Hadoop, Soot, Hibernate, Spring, JUnit

Course Work during PhD

Advanced Database systems
Approximation Algorithms

Machine Learning
Program Analysis

Web Search and mining
Parallelizing Compilers

Other Interests

Music: I mainly listen to Indian classical music, and play the tabla

Languages: Kannada, English, Sanskrit, Hindi

Games: Chess

Contact

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