

Tarun Prabhu

CONTACT INFORMATION	http://www.cs.illinois.edu/homes/tprabhu2	tprabhu2@illinois.edu
EDUCATION	University of Illinois at Urbana-Champaign , Urbana, USA PhD (Computer Science) [expected 2013]	Aug, 2010 – present
	University of Utah , Salt Lake City, USA MS (Computer Science)	Aug, 2008 – Aug, 2010
	University of Mumbai (St.Francis Inst.of Tech.), Mumbai, India BE (Computer Engineering)	Aug, 2003 – Jun, 2007
RESEARCH INTERESTS	Program analysis, systems, compiler design, software engineering	
PUBLICATIONS	<ul style="list-style-type: none">• MIGHT M., T. PRABHU. “Inter-procedural dependence analysis of higher-order programs via stack reachability.” <i>Proceedings of the 2009 Workshop on Scheme and Functional Programming. (Scheme 2009). Boston, Massachusetts, MA. August, 2009.</i>• BORKAR V, J. PINTO, T. PRABHU. “A New Learning Algorithm for Optimal Stopping.” <i>Discrete Event Dynamic Systems, Volume 19, Number 1/March 2009</i>, pages 91-113.	
CURRENT PROJECT	Working with Prof. Matthew Might to develop an automatic parallelization system for C programs using a stack-based interprocedural dependence analysis within the LLVM framework. .	
PROFESSIONAL EXPERIENCE	Grammatech Inc. , Ithaca, NY <i>Software Engineer Intern</i>	June, 2009 - August 2009
	Responsibilities included writing and testing models for Win32 API functions	
	<ul style="list-style-type: none">• CODE SONAR : Writing library models to approximate the behaviour of certain Win32 API's. The objective was to ensure that the company's static analysis tool - Code Sonar could detect improper use of API's classified as vulnerable by US-CERT. The models were written in C.	
	University of Utah , Salt Lake City, UT <i>Research Assistant</i>	August, 2008 – present
	Responsibilities include developing, testing and debugging C++ and Python code.	
	<ul style="list-style-type: none">• PROTOGENI : Adding XML support to Emulab, the networking testbed developed by the group. The current focus is to integrate support for the different file formats that will be used to describe the network topology which is to be emulated on Emulab. Backward compatibility with the existing formats has to be maintained. Some design changes are also being made to the document specification to remove obsolete features and add new, more expressive and flexible options.	
	MAQ Software , Mumbai, India <i>Software Developer Engineer</i>	July, 2007 – May, 2008
	Responsibilities involved developing, unit testing and debugging .Net (C# and ASP.Net) code for various projects, as well as performing certain maintenance tasks for deployed projects.	
	<ul style="list-style-type: none">• MICROSOFT STORE: Developed a tool (Slater) to be used for site maintenance by the administrators of Microsoft Store• DPE: Developed a set of user controls for the UI of a website to be used internally by Microsoft. ASP.Net AJAX was heavily used in this site.• WINDOWS MARKETPLACE: Developed patches and bug-fixes for both the user-facing web pages and the administrator's tools for the site. Was made the point-of-contact in the Mumbai(Bombay) team (of 8 developers) within 6 weeks of joining the team (this was also after a total of only 3 months of professional experience). Enabled full debug support for the project within Visual Studio which resulted in significant improvement in productivity.	

TEACHING
EXPERIENCE

- BEGINNING LINUX: Conducted an impromptu 2 hour workshop on Linux for the students attending the annual national student's convention of the Computer Society of India in March, 2005. Was asked to conduct the session just 15 minutes before it was due to commence. Covered the basics of using Linux from the command line with hands-on experience in writing and compiling programs on Linux. Also provided a brief description of Linux's high level layered architecture and notes on how to install it to create a dual-boot system.
- CSI-SFIT WORKSHOP SERIES: Conducted 3 hour long workshop sessions at St. Francis Institute of Technology (SFIT) as part of the college branch of CSI's series of workshops to provide introductory hands-on experience of various programming systems. These included Visual Basic, Matlab, Linux and "How to assemble a PC from parts."
- COURSES: Conducted hour-long sessions as part of certain courses which involved teaching a particular topic in that course to the class. Topics covered in the course of undergraduate studies included genetic algorithms, the CODA file system, non-parametric techniques in pattern recognition and game trees.

SELECTED
ACADEMIC
PROJECTS

The projects listed here are in descending order of duration and effort put into them.

- MACHINE LEARNING (*Final-year undergraduate project*): Implemented and experimentally verified a new algorithm which used stochastic approximations and linear function approximations to determine the state-value function in reinforcement learning problems. Determined how to parallelize the algorithm.
- GRID COMPUTING : Developed a framework and set of libraries for programmers to write parallel programs in C#.Net. The framework hid the details of the grid from the user and kept track of a changing number of processors available on the grid. No explicit message passing was required on the part of the programmer and no modifications were made to the language. Windows Services, Web Services, .Net's Remoting and Reflection were used.
- PARALLEL PROGRAMMING (*Course Project - Semester V*): Parallelized an existing sequential heuristic for the Travelling Salesman problem and implemented it in Java. The heuristic chosen was Lin's 2-opt strategy. Java's RMI mechanism was used.

ACTIVITIES

These are mostly related to school - both graduate and undergraduate:

- GRADSAC: Have served on the GradSAC (GRADuate Students Advisory Council) of the School of Computing at the University of Utah since April 2009. Responsible for organizing activities like the twice-yearly TGIF barbecue, the monthly CS department social and more serious work such as writing reports on faculty up for tenure, prospective faculty during recruitment drives and attending faculty meetings as the graduate students' representative.
- CSI: Served for 2 years as a council member of the CSI (Computer Society of India) chapter of St. Francis Institute of Technology (my undergraduate institution), first as Technical Secretary and then as Chairman. Organized - and in some cases conducted - seminars and workshops for the students on topics such as Visual Basic 6.0, Photoshop, Cyber Security and many others which would be of practical use to the students. The emphasis was to choose topics which the engineering syllabus did not cover at all or did not cover in sufficient detail.
- IRIS: Iris was the college magazine published once a year. Served for two years on the committee, first as Technical Editor (editor of the technical section of the magazine) and then as Magazine Secretary (chief editor). As Technical Editor, was responsible for selecting articles for publication written by the students as well as ensuring their factual and technical accuracy. As Magazine Secretary, was responsible for overseeing the various editorial teams (English, Hindi, Marathi and Technical) as well as the publicity and sponsorship teams.
- MOSAIC: Mosaic was the annual technical fest of the college. Was chosen to be the Chief Event Coordinator for the festival for 2005. The total team strength was over 100 people. The fest had various competitions where students from engineering colleges all across the city were invited. That year, Mosaic witnessed a record number of participants.

LANGUAGES

English (fluent), Hindi (fluent), Marathi (fair), Tamil (fair)

HOBBIES

Reading, bicycling, trekking, playing the keyboard, badminton