

# Suyash Gupta

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## EDUCATION

**Purdue University**  
PhD Scholar  
GPA: 3.80/4.00

West Lafayette, IN  
Aug 2015 – present

**Indian Institute of Technology Madras**  
Master of Science (Research)  
GPA: 8.57/10.00  
Thesis: Analyzing Recursive Task Parallel Programs

Chennai, India  
Jan 2012 – May 2015

**GGSIIP University**  
Bachelor of Technology  
GPA: 82.15/100

New Delhi, India  
Aug 2007 – May 2011

## PUBLICATIONS

- S. Gupta, R. Shrivastava, and V. Krishna Nandivada, Optimizing Recursive Task Parallel Programs. (to appear) in the proceedings of the International Conference on Supercomputing 2017.
- S. Gupta, V. Krishna Nandivada, IMSuite: A benchmark suite for simulating distributed algorithms, Journal of Parallel and Distributed Computing (JPDC), 75 (2015), Core Australia Journal Ranking – A\*, Download: <http://www.cse.iitm.ac.in/~krishna/imsuite>.
- S. Gupta et al., BlueARMStreamer: A real time streaming approach, in proceedings of IEEE International CICN Conference, 2011. <http://dx.doi.org/10.1109/CICN.2011.49>

## WORK EXPERIENCE

**Research Assistant, Purdue University**

Aug 2015 – present

- Project - Testing Weakly Consistent Distributed Systems
  - Design of Distributed Litmus testing framework, that is given a distributed litmus test, the data store consistency semantics, and the constraint condition, the framework aims at validating the constraint.
  - Key task is to reduce the exponential number of enumerations to a feasible set, to enable efficient validation.
- Project – Probabilistic Test Data Generation
  - Design of probabilistic test data generators that sample test inputs from various distributions such as Uniform, Binomial and Gaussian.
  - Extension of probabilistic test data generators implementation to recursive types such as lists and trees.
- Project – Programming paradigms for distributed databases
  - Development of a DSL in Ruby on Rails that implements users view of consistency.
  - Implementation of a parser in Haskell that parses database SQL queries.

**Intern, IBM India Research lab, New Delhi**

Feb 2015 – Apr 2015

- Project – Multithreaded Analysis of Java Programs
  - Study of a novel parallel escape analysis and pointer analysis algorithm.
  - Testing of a novel Java decompilation strategy.
  - Analysis of a novel Slicing algorithm.

**Project Associate, IIT Madras**

Jan 2014 – Dec 2014

- Project – Optimizing parallel programs for multicore systems.

- Design of two novel task parallel optimizations for reduction of task creation and task termination operations.
- Implementation of the two novel optimizations in X10 compiler.
- Analyzing the impact of proposed optimizations on the energy consumption.

**Teaching Assistant, IIT Madras**  
**Intern, Bharat Heavy Electrical Ltd.**

Jan 2012 — Dec 2013  
 Jun 2010 – July 2010

## AWARDS & HONORS

- Attended OPLSS'16 at Eugene, Oregon, 19th June 2016 – 2nd July 2016.
- Best Use of Data Visualization, Best Mobile App, Most Launchable product sponsored by Dorm Room Fund and PrincetonPy/PICSciE Prize at HackPrinceton 2016.
- First Prize at HackIllinois 2016 (Best Software Hack), and Best use of Microsoft Technology award – 19-21st February 2016.
- First at Purdue University and finalist entry to Windward Code Wars Spring 2016.
- Qualified for Semi-finals at Microsoft Imagine Cup Spring 2016.
- First Prize at Boston Hacks 2015 – Oct 31st – Nov 1, 2015.
- Awarded Scholarship from POPL and PLMW, to attend 42nd Principles of Programming Languages (POPL 2015) – Jan 12-18, 2015, Mumbai, India.
- Outstanding Teaching Assistant Award for courses: CS3310 (Aug 12), CS6848 (Jan 13).
- Scholarship from MHRD, Government of India, for qualifying All India Graduate Aptitude Test in Engineering (GATE) and securing admission at IIT Madras.
- 1st prize, Inter College project competition, 2011, organized by GGSIPU and Delhi Knowledge Development Foundation
- 2nd prize, Technical Paper Presentation, 2011, organized in association of Computer Society of India (CSI) at Jamia Millia Islamia.
- 2nd prize at C/C++ programming at Info Expression 2009.

## SKILLS

Languages:	C, C++, Java, OCaml, Clojure, Haskell, Ruby, X10, Cilk, Rails, Python
Web Technology:	HTML, CSS, PHP
Database:	Mysql, PostgreSQL, Sequel, Oracle 9i
Worked on:	8086, 8051, Arm Cortex A8, Beagle Board

## ACADEMIC PROJECTS

- |   |                |
|---|----------------|
| • Development of Three Phase Commit Protocol:   | Feb — Apr 2016 |
| • Extension of XINU Operating System:   | Aug — Dec 2015 |
| • Development of Parallel Pagerank algorithm using techniques such as Matrix-Vector multiplication and Random Walk: | Aug — Dec 2015 |
| • Implementation of Feedback-Directed Prefetcher:   | Aug — Nov 2012 |
| • Design of Mini-java compiler:   | Aug — Nov 2012 |
| • Design of Super scalar processor using VHDL:  | Jan — Apr 2012 |
| • Reaching Agreement in Network with Curious Nodes:   | Jan — Apr 2012 |
| • Design of Micro-java Interpreter:   | Jan — Apr 2012 |

## SEMINARS

- **IMSuite: A benchmark suite for simulating distributed algorithms** at Purdue University, 15th September 2016.
- **Analyzing Recursive Task Parallel Programs** at Indian Institute of Technology Madras, 16th October 2014.