

# Gaurav Mahajan

SOFTWARE ENGINEER

Microsoft Corporation, Building 44, Redmond, Washington 98052, United States of America

☎ (+1) (608)-628-9840 | ✉ gamahaja@microsoft.com

## Education

### IITD(Indian Institute of Technology, Delhi)

New Delhi, India

INTEGRATED MASTER OF TECHNOLOGY IN MATHEMATICS AND COMPUTING

Jun. 2008 - Aug. 2013

- Department Rank: 5
- GPA: 8.14/10

## Honors & Awards

- 2012 **MHRD Scholarship**, awarded by Government of India for academic excellence at IIT Delhi over 4 years
- 2011 **Rank 1**, Yahoo! HackU 24 hour hack marathon with over 300 participants from IIT Delhi and NSIT
- 2008 **IITD Semester Merit Award**, awarded for being among top 7% of students in IIT Delhi
- 2008 **CBSE Scholarship**, awarded for securing State Rank 14 and All India Rank 377 among 600,000 students in AIEEE 2008
- 2008 **Top 0.1%**, Joint Entrance Examination(IIT-JEE 2008) taken by over 400,000 students
- 2006 **Rank 5**, Regional Mathematics Olympiad(RMO 2006) sponsored by National Board of Higher Mathematics

## Research Experience

### Banach-Tarski Paradox, Major Thesis Project

New Delhi, India

GUIDANCE OF DR. SUBIMAN KUNDU, IIT DELHI

Jun. 2012 - Jun. 2013

- Discussed paradoxes from algebraic point of view in an expository article and introduced relationship between Congruence by Dissection and Equidecomposability
- Worked on the proof of Banach-Tarski Paradox using Hausdorff's Paradox and proof by absorption based on the book "The Banach Tarski Paradox" by Stan Wagon

### Banach-Tarski Paradox, Project

New Delhi, India

GUIDANCE OF DR. SUBIMAN KUNDU, IIT DELHI

Jan. 2012 - Jun. 2012

- Worked on the elementary analytical proof of Banach-Tarski paradox, based on a paper by Karl Stromberg
- Established role of Axiom of Choice in proving Banach-Tarski paradox

## Work Experience

### Microsoft Corporation, Redmond

Washington, USA

SOFTWARE DEVELOPER – RUNTIME TEAM, POWERAPPS

Sep. 2014 - Exp. Apr. 2017

- Participated in shipping 3 major releases: GA, Private Preview and Beta3 refresh for PowerApps
- Worked as part of a team to implement UI and architecture for generating applications from only data specifications
- Implemented the cross platform authentication stack for PowerApps client supporting Windows, Android, iOS and Web
- Wrote a C# data interface generator which generates a JavaScript data contract validation layer from the JSON schema of the data.
- Implemented architecture to ensure parity for apis which could be asynchronous/synchronous depending on platform

### Epic Systems, Verona

Wisconsin, USA

SOFTWARE DEVELOPER – DOCUMENTATION, EMR

Oct. 2013 - Sep. 2014

- Developed enhancements in VB and Cache to help customers meet Meaningful Use requirements by recommending documents
- Point person for technical problems related to Patient Instructions and Clinical References module

### Ecole Normale Supérieure, Cachan

Paris, France

SUMMER INTERNEE – MEXICO TEAM, LSV

May 2012 - Jul. 2012

- Selected as part of culture exchange program at ENS to work as summer internee
- Worked on finding probability measures with bounded errors on unfolding of various Petri Nets

## SparkTG, Delhi

SUMMER INTERNEE – APPLICATION DEVELOPMENT

New Delhi, India

May, 2011 - Jul. 2011

- Developed Movie Application to search movies, watch trailers and share on Facebook using TMDb API
- Developed Weather Application for parsing weather information from Yahoo! and UWeather APIs
- Additional capability to get local weather using GPS, Cell-ID, and Wi-Fi and save favorites

## Sun Microsystems, Delhi

SUMMER INTERNEE – CENTRE OF EXCELLENCE PROGRAM

New Delhi, India

Jun. 2010 - Aug. 2010

- Developed a plugin for Icarus Verilog to support synthesis for FPGA-based targets
- The plugin was incorporated into the Open Source tool chain for OpenSPARC FPGA synthesis at Sun Labs

## Selected Academic Projects

---

### Social Entertainment Website: The Toonatoes

New Delhi, India

TEAM PROJECT

Oct. 2011

- Developed a social website which converts a facebook status and consequent comments to a comic strip
- Winning entry in Yahoo! HackU University Hack Day organised by Yahoo R&D

### Course Recommending System

New Delhi, India

TEAM PROJECT

Jan. 2011 - Apr. 2011

- Implemented content and collaborative filtering based techniques for recommending relevant course
- Devised a rank algorithm for each course based on user interests and previous performances

### Mobile Door Opening System

New Delhi, India

TEAM PROJECT

Aug. 2010 - Dec. 2010

- Designed an interactive system to control a door remotely after reviewing the picture of visitor
- Programmed an Arduino based Bluetooth server to communicate with the phone installed on the door

### Design and Implementation of a Functional Programming Language

New Delhi, India

INDIVIDUAL PROJECT

Feb. 2010 - Mar. 2010

- Designed a functional language supporting multiple data types (integers, booleans and reals) and variables
- Developed the tokenizer and parser based on a prescribed grammar using ml-lex and ml-yacc
- Designed an interpreter to evaluate expressions written in the functional language

## Coursework

---

Optimization Methods and Applications	Neuro-Computing & Applications	Differential Equations	Introduction to Logic
Probability And Stochastic Processes	Measure, Integral And Probability	Modern Algebra	Programming Languages
Topology And Functional Analysis	Discrete Mathematical Structures	Linear Algebra	Numerical Methods
Embedded System Design	Analysis And Design of Algorithms	Digital Image Processing	

## Position of Responsibility

---

### Teaching Assistant

New Delhi, India

MATHEMATICS DEPARTMENT, IIT DELHI

- MAL 115: Multivariate Calculus and Matrix Theory
- MAP 720: Computing Lab

### Section Meeting Coordinator

Wisconsin, USA

EPIC SYSTEMS

- Conducted meetings with weekly updates and introductory sessions for new hires

### New Hire Mentor

Wisconsin, USA

EPIC SYSTEMS

- Appointed mentor to provide guidance and leadership to newly hired developers