

# Harsh Gupta

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## Education

2012–2017 **Master of Science, Bachelor of Science** | Indian Institute of Technology Kharagpur  
Mathematics & Computing - **8.06/10 GPA**

## Work Experience

- Sept 2013– **Open Source Contributor** | SymPy: A pure Python Compute Algebra System  
Present Fixed the evaluation of ImageSet for intervals, wrote an inequality solver, added `as_set` method for bool and relationals and wrote a Set Difference class. I also made an attempt of implement symbolic Interval Arithmetic which was taken up by Matthew Rocklin as a part of generalised Set Expressions.
- May 2014–Sept 2014 **Google Summer of Code Student** | SymPy: A pure Python Compute Algebra System  
2014 Rewrote symbolic solvers for Algebraic equations. The new solvers provides a clear input and output interface, removes inconsistency between real and complex solvers and supports infinite solutions.
- Oct 2013– **Team Member** | AGV IIT KGP: Autonomous Ground Vehicle  
Present Implemented basic motion planning algorithms and basic computer vision system. AGV IIT KGP is a research group at IIT Kharagpur which participated in Intelligent Ground Vehicle Competition(IGVC) 2014 held at Michigan we are planning to participate again in 2015.
- May 2013– **Web Developer** | Breathe Arts | Mumbai, India  
July 2013 Implemented a login system using OpenID and fixed the password recovery system on Breathe Art's ASP.NET online art galleries.

## Skills & Expertise

**Competent** | Python  
**Proficient** | C, Git, Vim  
**Familiar** | C++, MIT Scheme, HTML, CSS, JavaScript,  $\text{\LaTeX}$

## Course Work

**Mathematics** | Linear Algebra, Transform Calculus, Numerical Solution to Ordinary and Partial Differential Equations, Discrete Mathematics, Real Analysis, Partial Differential Equations, Probability and Statistics

**Computer Science** | Programming and Data Structures, Design and Analysis of Algorithms, Computer Organisation and Architecture, Object Oriented System Design