

# Shivam Vats

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📄 <https://github.com/shivamvats>

## Education

2013 **Class 12th, Central Board of Secondary Education (CBSE)** | Delhi Public School, R.K. Puram, New Delhi  
Physics, Chemistry and Maths (PCM) with Computer Science - **95.8 %**

2013–2018 **Master of Science, Bachelor of Science** | Indian Institute of Technology, Kharagpur  
Mathematics & Computing - **8.4/10 GPA**

## Work Experience

- Oct 2014– **Open Source Contributor** | SymPy: A pure Python Compute Algebra System  
Present Implemented hyperbolic functions `sech` and `csch` and fixed issues related to evaluation of trigonometric functions. Worked on the plotting module which currently uses Matplotlib as its backend. Added the option to change color of implicit plots.
- Dec 2014– **Open Source Contributor** | CSymPy: Fast symbolic manipulation library, written in C++  
Present Fixed issues related to its `expand` function and improved its Python wrappers. Currently working to implement its series expansion and polynomial module.
- Feb 2014– **Team Member** | AGV IIT KGP: Autonomous Ground Vehicle  
Present AGV is a research group at IIT Kharagpur which works in the field of autonomous ground vehicles. It participates in Intelligent Ground Vehicle Competition (IGVC) 2014 held annually at Oakland University, Michigan. I was part of the team that went to the competition in 2014. We plan to participate again in 2015.

## Skills & Expertise

**Competent** | C++, Python, C  
**Proficient** | Git, Vim, ROS  
**Familiar** | Java, Cython

## Course Work

**Mathematics** | Linear Algebra, Transform Calculus, Numerical Techniques, Discrete Mathematics, Real Analysis, Partial Differential Equations, Probability and Statistics  
**Computer Science** | Programming and Data Structures, Design and Analysis of Algorithms, Computational Number Theory