SHIVAM VATS

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WORK EXPERIENCE

AUG- MAY 2015	**Google Summer of Code** | Python Software Foundation **SymPy** and **SymEngine** Implemented a fast Series Expansion module for SymPy using a sparse data structure and faster semi-numerical algorithms. My project led to **20-1000** times speedup in expansions. I also designed the framework for SymEngine's Series and Polynomial modules.
PRESENT- OCT 2014	**Open Source Contributor** | **SymPy** **Among top 30 contributors out of nearly 400** SymPy is a popular open-source Python library for symbolic mathematics. I have worked on Polynomials, Series Expansions, Solvers and Plotting

PROJECTS

PRESENT - FEB, 2013	**Autonomous Ground Vehicle** - Developed a robust robot to participate in **Intelligent Ground Vehicle Competition (IGVC)**, held annually at Oakland University, US. - Implemented Extended Kalman Filter (EKF) based localisation for a mobile robot using ROS architecture and libraries. - Modified A* to write a lane-following local planner for a differential wheeled robot using Hough Transform on camera data. - Helped build the gazebo model for a three-wheeled, front-wheel driven vehicle and integrated various sensor plugins with it.
APRIL - FEB, 2015	**Resume Classifier** Developed an algorithm to match student resume with best suited companies by extracting key words and using a random forest classifier.

EDUCATION

2013-2018 (Expected)	B.Sc and M.Sc (Integrated Masters) in **Mathematics and Computing** **Indian Institute of Technology (IIT), Kharagpur** GPA: 8.14/10.00 (At the end of 4th semester)
2013	Class 12th, **Delhi Public School, R.K. Puram, New Delhi** CENTRAL BOARD OF SECONDARY EDUCATION (CBSE) Cumulative Average: 95.8 %

SCHOLARSHIPS AND ACHIEVEMENTS

2013	Awarded **Innovation in Science Pursuit for Inspired Research Scholarship (INSPIRE)** DEPARTMENT OF SCIENCE AND TECHNOLOGY (DST), Government of India
2013	Awarded **Merit Certificate in Physics** by CENTRAL BOARD OF SECONDARY EDUCATION (CBSE) for being in **top 0.1 %** of all Class 12 students across India.
2014	Represented IIT Kharagpur at **21st Annual Intelligent Ground Vehicle Competition (IGVC)**, Oakland University, as a Freshman.
2014	Awarded **Silver Medal** Inter-hall English Presidential debate

TECHNICAL SKILLS

Proficient:	Python, C++, C, Robot Operating System(ROS), Git, Vim
Intermediate:	Gazebo, Java, LaTeX