Mahesh Kumar   100010030

Aerospace Engineering   UG Fourth Year

Indian Institute of Technology, Bombay   Male

Specialization: N/A   DOB: 30 July 1993

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2014	7
Intermediate/+2	CBSE	MDSSS Rewari	2010	75.4
Matriculation	CBSE	JNV Gurgaon	2008	86.4

Internships and Projects-

Honeywell Technology Solutions Lab., Bangalore (Summer Internship)   2013

- Project entitled 'Multimodal Image Registration'.
- Improved existing image registration algorithms to get good feature match between visible and Infra-Red image pairs to support the development of an enhanced vision system for aircraft navigation in poor or nearly zero visibility condition.
- Developed Matlab codes for updated algorithms and got good feature match for visual-Near Infrared image pairs.

Mapping of Major irrigation projects in Maharashtra State   July 2013-Continue

- Mapping of major irrigation reservoir's catchment areas, storage capacity and command area using QGIS.
- Collection of data by field visits to major reservoirs and zonal irrigation departments, GOM.

Honey Bee Optimization Algorithms (Supervised Learning Project)   July 2013-Continue

- Studying the behavior of honey bees, like their decision making in nest site selection, honeybee navigation techniques, role of queen bee, dance behaviors and foraging strategies etc.
- These behaviors can be used to model powerful heuristic optimization algorithms to solve complex engineering problems.

ISRO Satellite Centre, Bangalore (Winter Internship)   2012

- Project entitled 'Vision Based Navigation for Spacecraft Rendezvous'.
- Developed a camera model for estimating the position and attitudes of a satellite in the vicinity of few meters up to several hundred meters, from its image using feature point correspondence information.
- Developed the autonomous control algorithm for the chaser satellite for the final approach phase of a rendezvous mission in orbit using ON-OFF control strategy and developed Matlab Codes for simulation.

Scilab Textbook Companion Internship   2012

Coded the examples of Textbook 'Aircraft Structures for Engineering Students' using Scilab.

Software Skills –

- **Matlab**, **Simulink**, Scilab, LT Spice, Microsoft office, C++, HTML, **Python**.
- Have ample experience of coding using **python**. Coded word games and Tic Tac Toe and coded a RSS feed parse which takes feeds using defined filters from WebPages and shows them in a graphical interface.

Positions of Responsibility-

Logistics Manager, Aerospace Engineering Association (AEA)   **2012-2013**
- Acted on the behalf of the students to manage logistical and infrastructural issues and managed monetary expanses at all activities of AEA.
- Part of the organizing team of Zephyr, Annual technical festival of Aerospace Engineering Department.

Organizer at Aviation day Festival, Nehru Science Center, Bombay   **2012**
- Organized Aviation Day at the Nehru Science Center on the occasion of Aviation Day with the help of Aeronautical Society of India.
- Gave lecture on Water Rocketry and conducted workshop on paper planes.

Coordinator at Techfest , Annual technical festival of IIT Bombay   **2011-2012**
- Leaded a four member's team of organizers responsible for organizing the Sudoku and aeromodelling competitions at annual technical competition of IIT Bombay.

Coordinator at E-Cell, entrepreneurship cell of IIT Bombay   **2011-2012**
- Responsible for coordinating lecture series, workshops organized by E-Cell and to get the media coverage in newspapers to publicize the workshops organized by E-Cell in colleges of different parts of India.

Awards and Achievements –

- Secured **All India Rank 3592** in IIT-JEE 2010 and **All India Rank 1550** in AIEEE 2010.
- **Winner** of Canyon Cross, **bridge making** competition held at **Techfest 2012, IIT Bombay**. Made a bridge using Popsicle sticks, having 1.3 m of bridging span, which was able to withstand nearly 120 times its own weight and 262 Kg of total weight, both were highest among all nearly 300 participants of the competition**.**
- **Winner** of Mystery Box, Strengthened **Structure making competition** held at Radiance 2012, Annual Technical Festival of **Mechanical Engineering Department**, IIT Bombay.
- Awarded Hostel **Technical Color** for immense contribution to technical activities in Hostel 8.

Miscellaneous-

- **NCC Cadet** at 2 Maharashtra Engineers Regiment, NCC Bombay.
- Member of team **UDAAN**, a student outreach program of Aerospace Engineering Department. Visited several schools to make the school children aware about aerospace engineering and technical education.
- Have basic skills and experience of working with **microcontrollers and electronic sensors** like arduino development board, Infra red, pressure and temperature sensors etc.
- Part of the hostel8 team in kho-kho General competition.