Achyut Panchal **09D01002**
Aerospace Engineering **UG Third Year(Dual Degree)**
Indian Institute of Technology, Bombay **Male**
DOB: 24/04/1992

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2012	8.13
Intermediate/+2	GSHSEB	Sharda Mandir	2009	91.20
Matriculation	GSEB	Sharda Mandir	2007	90.00

Scholastic Achievements

- Secured rank **1309** from a pool of about 4,00,000 candidates in IIT JEE 2009
- Secured rank **1267** from a pool of about 10,00,000 candidates in AIEEE 2009

Internship

Fluidpack, Ahmedabad *(May – Jul 2011)*

Manufacturer and exporter of tableting machines and tools

- Studied various aspects of **machine design** and specific tools used for design and analysis for the same
- Analysed various methodologies and practical applications of **manufacturing processes**
- Studied different departments of manufacturing unit and their inter-relationships

Projects undertaken

Turbofan Engine Bypass Ratio Study *(Aug 2011-till date)*

Guide: Prof. B.Roy, Dept. Of Aerospace engineering, IIT Bombay

- Analyzed various parameters of different turbofan engines with varying bypass ratios
- Simulated theoretical results and analysed effects of increasing bypass ratio on **engine performance**
- Studied effect of various bypass ratio on fan diameter, engine drag, noise, emissions

Micro-hydro Power Plant Design for Hilly Areas *(Jul – Nov 2010)*

Guide: Prof. Majumdar, Prof. Hemendra Arya, Prof. Sudhakar, Dept. Of Aerospace engineering, IIT Bombay

- Worked in a team of 6 people to conceptually design a micro hydro power plant for hilly areas
- Generated need statement, requirements for functions and sub functions, generated concepts, concept evaluation
- Studied and analysed various tools used for design optimization like **QFD, TRIZ**

Image Blurriness & Quality Improvement in Aerial Imagery *(Supervised study)* *(Jan – Apr 2011)*

Guide: Prof. Hemendra Arya, Dept. Of Aerospace engineering, IIT Bombay

- Studied the reasons of image blurriness and also studied ways to improve the image quality in aerial imagery
- Analysed tools like **MTF, OTF, Edge gradient analysis** to quantify image blurriness
- Studied various **Forward Motion Compensation** and **Angular Motion Compensation** methods and analyzed its effects on quality of image

Unique Identification for Campus residents *(Coding project in C++)* *(Jul – Nov 2009)*

Guide: Prof. D.B. Phatak , Dept. Of Computer Science engineering, IIT Bombay

- Worked as a part of the team designing Unique Identification for every campus residents
- Headed a team of 4 people and coordinated with other leaders to create the entire database required for the same
- Carefully analyzed the **relational database management systems** and carried out systematic implementation of various methodologies employed for the same

Remote Controlled Model Airplane *(March 2010)*

Guide: Prof. Dr. K. Sudhakar, Dept. Of Aerospace engineering, IIT Bombay

- Designed and developed a **2-axis controllable** Remote controlled airplane to understand the concepts

- Further optimized the design to exhibit a flight of distance 100 m in minimum possible time to participate in Mach-infinity, zephyr, India's largest college aerospace festival

Obstacle Detecting Line Follower *(Oct – Nov 2010)*

Guide: Prof. Hemendra Arya, Dept. Of Aerospace engineering, IIT Bombay

- Worked in a group of 4 for the development of the code to follow a certain path and obstacle detection
- Utilized **Firebird 3.0** as a hardware platform and **ATMEGA 128** micro controller to implement the code
- Used **infrared sensors** for obstacle detection

Robotics and Engineering

Model Rocketry

- Participant of single and double stage solid fuel model rocketry championship for continuously 3 yrs. held in January, 2003 January, 2004 and February, 2005 held by VSCSC which were the first of their kinds to be held in all over India
- Achieved **1st position** in all India **single stage solid fuel model rocketry** championship-2005
- Achieved a height of **168 m** – set a **record in India** single stage model rocketry.

Other

- Participated in F1 model RC car competition 2009 and made a RC car for the same in a team of 4 people
- Participated in the written science quiz held by Physical Research Laboratory in February, 2006

Position of Responsibility

Convener, SAAZ *(Music club, IIT Bombay)* *(Apr 2011 – till date)*

- Responsible for conceptualising and conducting sessions, workshops, events related to music in the institute
- Conceptualised a new event "Swarmilap" and modified the structure of Battle of the bands competition considering changing requirements and goals of institute music scene
- Organised Surbahar, The biggest musical event of IITB, which catered an audience of more than **800 people** and coordinated among the team of more than **90 people** for the execution

Coordinator, Pronites, Mood Indigo 2010 *(Asia's largest college cultural festival)* *(Jun - Dec 2010)*

- Lead a team of **25 organizers** and worked for the execution of 4 Pronites catering to an audience of around **40,000 people**
- Supervised the execution Live-wire Competition, India's biggest English rock band competition

Software skills

- **Languages**: C, C++, Python
- **Operating Systems**: Linux, Windows
- **Engineering Packages**: Gasturb 11, Matlab, Simulink, Mathematica, Solid Edge, Autocad, Mastercam, Scilab
- **Other packages**: MS-Office

Extra-Curricular Activities

- Part of the band which achieved **1st position** in Battle of the Bands 2010, IIT Bombay
- Awarded **Hostel Music Colour** for year 2010-2011
- Achieved **black belt** in karate (Goju–ryu style) by Arjun School of Martial Arts affiliated with MAAS, UK.
- Successfully completed the course of **Kick-Boxing** and **Spirit Combat**
- Awarded from Young Envoys International, Hyderabad for outstanding performance in national exhibitions paintings and poem-"Joy of India"
- Successfully participated in "**Improving power of expression through dramatics "** in May, 2010 by Rama Mundra, a summer workshop organized by Ahmedabad Management Association

Relevant Courses

Theory Courses

- Aircraft Propulsion
- Aerodynamics
- Introduction to engineering design
- Control Theory
- Aerospace Structural Mechanics
- Data Analysis and Interpretation

Lab courses

- Applied Mechatronics
- Aerospace Measurement Laboratory
- Aerospace Structures lab
- Modelling and Simulation Laboratory
- Control systems laboratory