Manoj Kumar Karadia | **09D01014**
Aerospace Engineering | **Dual Degree (B.Tech+M.Tech.)**
Indian Institute of Technology Bombay | **Male**
Specialization: Aerospace Engineering | **DOB: 05/08/1992**

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2014	6.33
Intermediate/+2	CBSE	Jawahar Navodaya Vidyalaya	2009	76.00
Matriculation	CBSE	Jawahar Navodaya Vidyalaya	2007	85.00

PROFESSIONAL EXPERIENCE

NATIONAL AEROSPACE LABORATORIES, CSMST| NEW WIND POWER PLANT AT BARIYALPANI (BARWANI) **[DEC'12]**

Guide: Dr. G.N. Dayananda and Manabendra Manindra kumar De

- Premeditated and plotted **Weibull Distribution**, a type of probability density function
- Studied diurnal wind variations to find average velocity was less than cutting wind speed of **6mps**
- Arrived at a wind-velocity versus power curve of wind turbine using **PROP PC** and **GH Blade**
- Concluded wind velocities at site were insufficient for effective wind farm power generation

IDEAL 21ST CENTURY

- Tutored IIT JEE (2014) aspirants of class 11 and above in subject of mathematics
- Prepared catalogue of imperative content of subject for exam preparation
- Counseled about **80 students** and **30 parents** (about queries regarding IIT and other academic aspects) as part of seminar conducted to boost up students in preparation

ACADEMIC ACHIEVEMENTS

- All India Category **Rank 118** in **IIT-JEE (2009)** out of 4 lakh students
- Selected among **top 1.2%** of about 1 million students in **AIEEE-2009**
- Secured position in best **40** in **Dakshana Foundation** at national level in 2007
- Secured a position in top 80 out of **10,000** appeared in **JNVST2002**

KEY PROJECTS UNDERTAKEN

STUDY OF THERMAL ENERGY IN RIJKE TUBE (DUAL DEGREE DISSERTATION) **[MAY'13-JUNE'14]**

- Project is primarily aimed at analysis of thermal energy passing through three different planes with and without suppression of thermo acoustic effects in Rijke tube
- **Created** Virtual Instruments using National Instruments LabVIEW software for data acquisition
- **Projected** thermal variations in each plane for visualization using MATLAB
- Calculated and analyzed thermal energy, its loss and rate of loss of thermal energy using experimental data
- **Concluded** that thermal energy increases when air is injected in Rijke tube, Its loss is high without air injection, rate of loss of thermal energy decreases along the length of Rijke tube
- **Successfully** shown a new effect that hot part for a plane shifts from upper half to lower half along the length

VERIFICATION OF INCOMPRESSIBLE FLOW USING OPENFOAM **[JULY'12-NOV12]**

- Studied numerical methods for solving Euler equations, in particular 1-D Shock Tube Problem
- Modeled and **simulated** incompressible flow in **Lid Driven Cavity** using **OpenFOAM**
- Studied accuracy and convergence rates for Finite Difference Method and Godunov Solver
- Compared graphical results with existing data, reduced error by **0.05%**

PORTABLE CATHODE RAY OSCILLOSCOPE DEVICE **[JULY'10-DEC'10]**

- Produced design of a low cost portable interface system to generate, analyze and display signals
- Integrated additional features: **In-built signal generator**, **peripheral port** to increase functionality
- Effectively achieved portability by reduction in size and weight of traditional CRO

FABRICATION OF INDOOR AIRSHIP **[MAY'12-JUNE'12]**

- Conceptualized project, sizing and fabrication of a remotely controlled airship
- Responsible for building GNVR shaped airship petals using self-made petal stand
- Incorporated new fabrication methods for envelope, gondola and **He** valve to reduce cost by **20%**

DIRECTED ENERGY LASER WEAPON| DESIGNED HALE UNMANNED AERIAL SYSTEM **[JAN'13-APRIL'13]**

- Surveyed existing UAS utilizing directed energy laser system and single aisle engines
- Completed preliminary sizing, weight estimation, engine sizing and landing gear design
- Formulated payload and performance related specs to enhance endurance and power output
- Upgraded existing missile defense system and proposed projected models for key performance and project parameters to year 2035 with a service life of 20 years

AIRCRAFT PROJECT | STRUCTURAL DESIGN OF PASSENGER AIRCRAFT **[AUG'12-NOV'12]**

- Ingenuous **Twin Aisle Short Range Regional Jet** for 120-180pax with range 1250nm
- Detailed aerodynamic, structural, propulsion, control and performance analysis with 3D models of aircraft and subsystem were prepared

POSITION OF RESPONSIBILITY

COORDINATOR, EVENTS, TECHFEST **[JULY'10-MARCH'11]**

- Coordinated with team of **20 coordinators** and Manager
- Handled team of **10 organizers** to conceptualize, **Full Throttle** (IC Engine Car Racing Competition) including **120 participants** and more than **1000 spectators**
- Worked as an organizer of **Blackbird,** remote controlled aircraft competition in **Techfest (2009-10)**

COORDINATOR, COMPETITIONS, MOOD INDIGO **[JULY'10-DEC'10]**

- Conceptualized most spectacular event, **Obstacle training**, with help of **10** organizers team
- Conducted training considering safety and security of **100** participants

MANAGER PENTHOUSE FOOTBALL LEAGUE

- Led team of **15 players** as Manager and Captain of team against **7** other teams
- Responsible for team strategy and game play, won tournament in Penthouse Football League

EXTRA CURRICULAR ACTIVITIES

TECHNICAL

- Built, studied and analyzed effects of aircraft components such as fuselage, wings, rudder and horizontal stabilizer on range and endurance of chuck glider
- Manufactured a remote controlled aircraft as a part of course project
- Developed **codes in MATLAB** and Python for **satellite trajectory analysis**, **ground track prediction**, **perturbation analysis** and station keeping

LEADERSHIP

- Obtained A**,** B and C certificates in **National Cadet Corps** (NCC)
- Awarded a post of **Corporal** by **Commanding Officer** of 2MAH ENGR REGT NCC, Mumbai

SPORTS

- Secured **3rd Position** in Phitathlon conducted by Hostel 3
- **Member of runner team** (2010) and **winner team**(2012) of intra hostel Premier League
- **Represented** hostel sports team in inter hostel games in **volley ball**, **basketball** and **kho-kho**

CULTURAL

- Awarded **PAF** Color as part of Hostel 5 team for **Performing Arts Festival** (**2nd** in 2010)
- **Participated** in several cultural events: Movie spoof, Situational acting and Dance competitions

SOFTWARE SKILLS

- Hardware Programing: PID controller, Arduino microcontroller
- Software: **MATLAB**, Scilab, **OpenFOAM**, **Catia**
- Programming languages: C++, Fortran, **python**

Mobile No: 8424948697