Amit Mangtani **09001018**
Aerospace Engineering **UG Third Year (B.Tech.)**
Indian Institute of Technology, Bombay **Male**
DOB: 28-06-1991

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2011	8.13
Intermediate/+2	State Board	Vankhandeshwar Higher Secondary School	2009	87.30
Matriculation	ICSE Board	St, Peter's School	2007	87.30

SCHOLASTIC ACHIEVEMENTS

- Secured All India Rank 1182 (out of 3,85,000 appeared) in **JEE-2009**
- Secured All India Rank 2009 (out of 9,62,000 appeared) in **AIEEE-2009**
- Selected for the second round of **NTSE 2007** (National Talent Search Examination) exam

WORK EXPERIENCE

ZEUS NUMERIX PVT. LTD, MUMBAI MAY 11 – JULY 11
Summer Trainee, CFD Division

- Performed **literature survey** on accuracy of Computational Fluid Dynamics (CFD) for Formula One car simulation
- **Simulated** various complex physical problems of NASA like Sajben Transonic Diffuser, S-Duct using their proprietary tool, CFD Expert
- **Analyzed** the physics of problems through pressure, velocity and temperature distribution data
- **Generated** very fine mesh for capturing various phenomenons such as *boundary layer separation, shock formation and laminar sublayer*
- **Validated** the computational results with the experimental data

NATIONAL WORKSHOP TITLED "COMPUTATIONAL FLUID DYNAMICS: DESIGN AND ANALYSIS", HYDERABAD JULY 11
Speaker and CFD Software Trainer

- Trained more than 25 participants, mostly experienced scientists from national laboratories
- Gave Hands on session on simulation of weak and strong (**Transonic**) shock in **NASA Sajben Duct**

RELEVANT COURSES UNDERTAKEN

Fluid Mechanics, Aerodynamics, Basics of Computational Fluid Dynamics (CFD), Computing High Speed Flows, Engineering Design, Introduction to Numerical Analysis, Computer Programming and Utilization

RESEARCH EXPERIENCE

THEORETICAL ANALYSIS OF SHOCK-TURBULENCE INTERACTION MAY 09 – APRIL 10

- Studied the three dimensional interactions in turbulent flow using **Linear Inviscid Analysis**
- Developed a code on **FORTRAN** to understand the intensity of turbulent fluctuations using **Tecplot360** for visualization

KEY ACADEMIC PROJECTS

AERODYNAMICS PROJECT AUG 11
Source Panel Method

- Developed a code on **FORTRAN** to *predict and analyz*e the flow around the **circular cylinder** and the **NACA 0012** airfoil
- *Validated* the results by solving theoretically the simplest case of circular cylinder

MODELLING AND SIMULATION PROJECT APR 11
Motion of a truck seat equipped with suspension mounted inside a truck which also has suspension

- **Modelled** this system as *fourth order system* using SIMULINK with a double mass-spring-damper setup
- **Analyzed** the system by determining specific characteristics of the *frequency response* using the bode plot

IMPROVEMENT OF SECURITY SYSTEM IN IIT BOMBAY JULY 10 – NOV 10

Engineering Design Process

- Developed a **working model** of the security system which is approved by the supervisors and the renovation of new IIT Bombay security system matches with our design
- Generate ideas, evaluating technical and economical feasibility and analysed complete process for designing any system or product
- Learned Quality factor Deployment (**QFD)** method to relate technical requirements with customer requirements

FINGERPRINT REGISTRATION AND RECOGNITION SOFTWARE JULY-NOV' 09

- Developed a code on C++ which collects the fingerprint data and verification is done
- Image Processing and elaborate data analysis and handling using C++ was also done

SOFTWARE SKILLS

- **CFD SOFTWARES:-** CFD Expert, Fluent and Gambit
- **PROGRAMMING LANGUAGES:-** C**,** C++, FORTRAN
- **OPERATING SYSTEMS:-** Windows, Linux
- **OTHER SOFTWARES:-** Matlab, Mathematica, MS-Office, Adobe Photoshop, Tecplot360

POSITIONS OF RESPONSIBILITY

INTERNSHIP CO-ORDINATOR, PRACTICAL TRAINING CELL JULY 11- PRESENT

- Part of a **25 member team** responsible for securing internships of **1,400+ students** through **300+ companies and 30+ universities**
- Actively involved in formulation of policies, negotiation with companies and acting as a liaison between students and the institute administration
- Initiated contacts with global *Aerospace* firms and successfully tapped unexplored **Automotive** sectors

DEPARTMENT ACADEMIC MENTOR JULY 11-PRESENT

- Mentoring 6 undergraduate students; providing necessary academic guidance and helping them in their stay at IIT Bombay
- Liaising between faculty advisors and respective batches providing feedback and recommendations

HYPERSONICS CFD GROUP, AEROSPACE ENGINEERING MAY 09 – APRIL 10

- Learned various numerical methods for simulation of High Speed Flows
- Performed literature survey on different kinds of turbulence models
- Analyzed the physics of the scramjet engines, Re-entry cepsules with the different models

EXTRA CURRICULARS

- Invited by the **Aeromodelling club** of IIT Bombay to give a talk on **Formula One Cars** regarding about the aerodynamics and the major *design innovations* of the cars
- Actively involved in different activities conducted by Aeromodelling Club such as making Boomerang, Chuck Glider aircraft, Wireless remote controlled aircraft

Sports

- Awarded an **A** certificate in one month long rigorous Basic Mountaineering Course held in the Himalayas by DMAS-Manali in July 2010; scaled a peak of 16000 feet altitude
- Awarded Hostel **Sports Special Mention** for active participation in inter-hostel sports competitions such as *Badminton, Cricket, Hockey*, etc.
- Recipient of **B** certificate in one year National Cadet Corps **(NCC)** course

Cultural

- Awarded Hostel **PAF Colour** for doing an extraordinary work in the Performing Arts Festival **(PAF)'11,** the **Cultural festival** of IIT Bombay
- **Special Mention** in the Performing Arts Festival **(PAF)'10**
- Awarded Hostel **Cultural Special Mention** for active participation in different Cultural activities such as *Gyrations, Main Dramatics General Championship*, etc