



**SUMIT GUPTA**  
**Electrical Engineering**  
**Indian Institute of Technology, Bombay**  
**Specialization: Communication & Signal Processing**

**09D07006**  
**UG Third Year(Dual Degree )**  
**Male**  
**DOB: 21-06-1991**

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2012	8.02
Intermediate/+2	C.B.S.E.	Happy Days School	2008	77.80
Matriculation	M.P. Board	Bal Shiksha Niketan School	2006	90.00

## INDUSTRIAL EXPERIENCE AND RESEARCH PROJECTS

### Summer Internship at Karlsruhe Institute of Technology, Germany

[May'11 - Jul'11]

*Project Title: Image Stitching Algorithms for high resolution Optical Microscopy*

*Contact Person: Prof. Dr. Wilhelm Stork (wilhelm.stork@kit.edu)*

- **Successfully completed** this project to supplement the development efforts of 'add-on' optics for cell phone at ITIV
- **Optimized the Image Stitching Process** by using my **own algorithms** and extracting some features from Hugin SDK
- In handyprobe and Dioscur ID projects they have developed add-on optics for product security where particles with resolution of upto 20um are imaged. As an extension my task was to embark on **evaluation of this technology as cell phone microscopes** also. The differentiating factor in our approach was custom optics and cost effectiveness

### Summer Internship at Larsen & Toubro Infotech, Mumbai

[May'10 - Jun'10]

- **Studied innovation models** of leading companies (L&T, Reliance Communications, Crompton Greaves, Infosys etc) & customized key methodologies to suit the product development strategy of Larsen & Toubro, Infotech
- Undertook a Project on **MS-Sharepoint migration from 2007 to Sharepoint-2010** and thus improved "L&T- Scape". L&T scape is a web based intra L&T portal. Also Installed MS Sharepoint Server in L&T
- Improved **SMS Gateway Project** & got **Appreciation Certificate** by CIO, L&T Infotech for my sincere work
- Invited for a **conference with Microsoft** on its new product "**Microsoft Forefront Identity Manager**". Agenda of the meeting was to implement this software in L&T, infotech. That project was worth \$80 million

## COURSE PROJECTS AND PERSONAL PROJECTS

### Mini India UID Fingerprint Identification Project: (Guide: Prof. D.B.Phatak)

[Sep'10 - Nov'10]

- Successfully completed "Mini India UID Project based on FINGERPRINT IDENTIFICATION" as a Team Leader
- Our work was to do Application part and to make "Template Matching Function" **Using C++ Coding**

### Brick Shooting Game LED's:

[Jan'10 - Feb'10]

- Patterns of red LEDs will be shifting down, which will represent a wall moving down onto the shooter (LED pattern controlled by player). The shooter can shoot bullets (Represented by a green LED moving up)
- The aim is to destroy the moving wall by shooting it, brick by brick, before it reaches the player

### Library Management System:

[May'10 - Jun'10]

- Designed code using PHP to connect My SQL database to the interface
- It executes the operations required by the library, to be set up in the Department of Electrical Engineering, IITB

### Line Following Robot:

[Nov'10 - Dec'10]

- Made a sophisticated "Line Following Robot" using Microcontroller (Arduino-UNO) for the competition "Loop-Rush" at Techfest, 2011

### Infrared Tracking System:

[May'10 - Jun'10]

- Made an IR tracking system that can track the distance and angle of any object in real-time.

### Remote Controlled F1 Racing Car:

[Sep'09 - Oct'09]

- Made a Remote Controlled F1 Racing toy sized car for a Competition conducted by Technic Club, IIT Bombay
- The bot could climb an incline and pass through hurdles. It was built using RF Transmitter and Receiver circuits

### Voice Encryption and Decryption System:

[Sep'11 - Oct'11]

- **Created a new algorithm** for voice encryption optimizing the algorithm used for secured message transfer
- The **algorithm involved LFSR encoding**, which can decrypt voice with an accuracy of 94% to 98%.

## SCHOLASTIC ACHIEVEMENTS

- Secured an **All India Rank of 315** in Indian Institute of Technology Joint Entrance Examination, 2009
- Secured an **All India Rank-640** and **State Rank-34** in **AIEEE, 2009**
- Among the **top 50** students selected all over the world for online **Caltech Space Challenge Competition** by NASA-JPL and Keck Institute for Space Studies.
- Appointed as a **Institute Teaching Assistant** in my sophomore year with a stipend of Rs. 6000 per month
- **1st** in District and **12th** position in State (M.P.) in 10th Board Exam

## RELEVANT COURSES

- |   |  |
|---|--|
| • <b>Probability and Random Processes</b> | • <b>Linear Algebra, Calculus, Complex Analysis</b>  |
| • <b>Signals and Systems</b>              | • <b>Computer Programming and Utilization</b>        |
| • <b>Logic Design</b>                     | • <b>Data Analysis and Interpretation</b>            |
| • Electromagnetic Waves                   | • Courses on Electrical Systems, Electronic Circuits |
| • Microprocessors                         | • Experimental and Measurement Lab                   |
| • Differential Equations                  | • Machines and Power Electronics (Theory + Lab)      |

## COMPUTER AND SOFTWARE SKILLS

- **Programming Languages:** experienced in **C/C++ coding**, open CV, Python, Visual C#, ASP .Net, VHDL
- **Web Development:**, HTML, CSS, Javascript, PHP, MS Sharepoint
- **Databases:** Oracle, SQL Server, Postgresql, My SQL
- **Other tools & APIs:** skilled in **Matlab**, Scilab, Latex
- **Technical Tools:** Microcontrollers, Eagle, Spice, i-Verilog

## POSITIONS OF RESPONSIBILITY

- **Institute Secretary, International Relations:** Responsible for all International Affairs, Exchange Programs, MOUs, Language Course Classes and Seminars by foreign University Professors held in IIT Bombay [Apr'11 - till now]
- **DAMP Mentor (Department Academic Mentorship Program):** My work is to mentor academically weak students of Electrical Engineering Department of IIT Bombay [Mar'11 - till now]
- **Institute Teaching Assistant** in Humanities and Social Sciences Department of IIT Bombay [Jan'11 - Mar'11]
- **Class Representative**, Dual Degree Students of 2009 batch, Electrical Engineering Department [Jul'10 - till now]
- **Council Member, EESA** (Electrical Engineering Student Association) [Aug'10 - Apr'11]
- **Coordinator for Mood Indigo**, Asia's largest College Cultural Festival [Sep'10 - Dec'10]
- **Coordinator for Techfest**, Asia's largest Science and Technology Festival [Oct'10 - Jan'11]

## EXTRA CURRICULAR ACTIVITIES

- Awarded **Certificate of Appreciation** by Dean of IIT Bombay for my Disciplinary work and Altruistic Efforts towards activities of National Service Scheme (NSS). This certificate was given to 15 students out of 250 involved
- Acted in a **short movie by MTV**(National Television Channel) based on the Hollywood Movie 'Inglorious Bastards'
- **Languages** – English, Hindi, German, Marathi, Basic French
- **Interests** - Chess(1<sup>st</sup> in Division), Travelling, Inline Skating, Rubik's Cube solving, Solving Logical Puzzles and **Algorithm formulation and optimization.**