**Nikhil Diwakar Limaje** **123050079**
**Computer Science & Engineering** **M.Tech.**
**Indian Institute of Technology Bombay** **Male**
**Specialization: Computer Science & Engineering** **DOB: 23/01/1991**

| Examination | University | Institute | Year | CPI / % |
|---|---|---|---|---|
| Post Graduation | IIT Bombay | IIT Bombay | 2014 | 8.07 |
| Undergraduate Specialization: Computer Engineering | | | | |
| Graduation | Mumbai University | DMCE | 2012 | 66.63 |
| Intermediate/+2 | Maharashtra State Board | Birla College | 2008 | 68.00 |
| Matriculation | Maharashtra State Board | Model English High School | 2006 | 86.13 |

## Fields of Interest

Web Security, Computer Networks, Functional Programming

## M.Tech. Project

- **Web Security - Next Generation Attacks and Defenses**
  *(M.Tech. Project, under the guidance of Prof. Bernard Menezes)* *May'13 - till date*
  - Designing attacks on web applications that exploit features in the recent HTML Version 5
  - Implementing next generation Clickjacking, XSS and blended attacks on the WWW
  - Critically evaluating client side, server side and combined client-server side defenses
  - Upgrading browser extensions for enhanced security

## M.Tech. Seminar

- **Secure Group Communication Over Data Networks**
  *(M.Tech. Seminar, under the guidance of Prof. Virendra Sule and co-guidance Prof. Bernard Menezes)* *Spring '13*
  - Studied security related issues in Group Communication
  - Studied various protocols for computing and distributing the group key securely among the legitimate members
  - Analysed these schemes with respect to communication and computation costs

## Course Projects

- **CSRF, Blind SQLi, DOM based XSS: The Evil Triangle** *Network Security and Cryptography II*
  *(Guided by Prof. Bernard Menezes, Spring '13)*
  - Carried out CSRF attack on a social networking site
  - Demonstrated Blind SQL Injection attack on a website
  - Created a demo for DOM based XSS attack
  - Studied different countermeasure techniques for the above attacks
- **Design of Block Cipher and its analysis** *An Introduction to Number Theory and Cryptography*
  *(Guided by Prof. Virendra Sule, Spring '13)*
  - Designed a 32-bit block encryption function, using SAGE tool
  - Developed modules for Dynamic S-box Generation, Division-based Round Key Generation and Linear Mixing of the bits, using Python
  - Successfully achieved avalanche effect in the encryption fucntion and carried out stream rank test on the ciphertext generated
- **Segment Routing Optimization** *Optical and Access Networks*
  *(Guided by Prof. Ashwin Gumaste, ongoing)*
  - Improving the scalability of source routing
  - Investigating the nodes from the perspective of SDNs, multi-domain and load-balancing, using simulation
- **Interpreter for micro-Haskell** *Functional Programming*
  *(Guided by Prof. Amitabha Sanyal, Autumn '12)*
  - Designed a parser for converting programs in micro-Haskell to an internal representation in Haskell
  - Translation of these internal representation to G-code and interpretation of the same

- **Performance Analysis of Sort Utility** *Software Lab*
  *(Guided by Prof. Supratim Biswas, Autumn '12)*
  - Compared performance of Optimized, Unoptimized and Manually Optimized sort code
  - Used Bash scripting alongwith Perf tool, SVN and Gnuplot
- **Nutrient Feeding Robot** *Embedded Systems*
  *(Guided by Prof. Kavi Arya, Autumn '12)*
  - Programming in Embedded C for ATMEGA 2560 microcontroller board
  - Locates plants using sensors and sprinkles nutrients around it using circular mesh and vibrator
  - Used Rack and Pinion gear mechanism to facilitate the linear movement of mesh

## BE Projects

- **Authentication using Biometric Pattern Analysis** *BE Final Year Project*
  - Used webcam for capturing multiple images of a palm, secret palm pattern only known to the user
  - Implemented image processing through a series of operations to determine the final pattern, using Matlab
- **Cricket Website** *BE Third Year Project*
  - Developed an interactive website which displays the information of the selected team and their players

## M.Tech. Courses

Network Security and Cryptography II, An Introduction to Number Theory and Cryptography, Optical Networks, Functional Programming, Embedded Systems, Software Architecture, Program Analysis, Advanced Computer Architecture

## Technical Skills

- **Programming Languages**: C, C++, Java, Haskell, MIPS(Assembly Language)
- **Scripting Languages**: Bash Unix Shell Scripting, Python, Gnuplot
- **Web Technologies**: HTML, Javascript
- **Operating Systems**: Linux, Windows
- **Tools**: Perf, svn, LaTeX
- **Databases**: MySQL, PostgreSQL, Oracle

## Positions of Responsibility

- **Volunteered** in organizing an International Level Conference **ICVGIP 2012**, held at **IIT Bombay** *2012*
  - Part of the Registration team, which handled around **1000** participants
- **Teaching Assistantship, IIT Bombay**:
  - Computer Architecture *(with Prof. Bernard Menezes)*
    - Conducted lab sessions, prepared tutorials and evaluated assignments of **120** students
  - System Administrator *(with Prof. Subhadra Ramchandran)*
    - Ensured proper functioning of around **200** machines during lab hours

## Extra-Curricular Activities

- Participated in the **Robotics** event at **Technitude'09**, a state level technical festival held at DMCE *2009*
- Participated in **Kresit Premier League**, a Department level Cricket Championship Tournament, at IIT Bombay *2013*
- Participated in Intra Hostel Cricket competition at Hostel-5, IIT Bombay *2013*
- **Hobbies**:
  - Playing Cricket, Badminton, Chess and Carrom
  - Reading technical e-books
  - Listening music, watching movies
  - Gymnasium
  - Playing PC games