



**Harshith Goka**  
**Computer Science & Engineering**  
**Indian Institute of Technology Bombay**

**150050069**  
**UG Third Year (B.Tech.)**  
**Male**  
**DOB: 09/03/1998**

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2019	8.79
Intermediate/+2	Telangana State Board of Intermediate Education	Narayana IIT Academy Attapur	2015	98.40
Matriculation	Board of Secondary Education, Andhra Pradesh	Narayana IIT Olympiad School	2013	9.70

## SCHOLASTIC ACHIEVEMENTS & CREDENTIALS

- Secured **All India Rank 25** in **JEE (Advanced)** out of **150,000** candidates (2015)
- Secured **All India Rank 8** in **JEE Main (B.Arch)** out of **150,000** candidates (2015)
- Secured **All India Rank 26** in **JEE Main (B.Tech)** out of **1.3 million** candidates (2015)
- Awarded the Kishore Vaigyanik Protsahan Yojana (**KVPY**) Fellowship held by the Department of Science and Technology, Government of India with an **All India Rank 70** (2014)
- Secured **State Rank 19** in **AP State Common Entrance Test** out of about **150,000** candidates (2015)
- Secured **State Rank 60** in **Telangana State Common Entrance Test** out of about **250,000** candidates (2015)
- Awarded **AP grade** for excellence (given to top 1% students) in Engineering Drawing (2015-16)

## KEY PROJECTS

### **Formfly: Crowdsourced Digitising with Data Privacy**

Summer 2017

Guide: Ankit Rawat - Internship Project

11TechSquare

- Involved in developing **Python** code which snips image, using **SIFT**, into parts(fields) hence ensuring data privacy
- Developed python code for snipping **Aadhaar ID** card's(Unique Identity for Indians) image to its constituent fields
- Also uses **OCR** data on the image to predict which fields they represent and developed a generic interface for other Identity cards

### **Predictive Music Synthesis**

Spring 2017

Prof. Ganesh Ramakrishnan - Course Project

IIT Bombay

- Designed and trained a **Recurrent Neural Network** on Piano Music Notes of *Frederic Chopin* in **MIDI** files and produced music iteratively
- Makes use of **LSTM cells and Dense layers** in the RNN for learning the patterns in the music
- Analysed the outputs using **Tempograms, Spectrograms, Chromagrams** and compared with the original music

### **Scilab Julia Interface**

Summer 2017

Guide: Shamika Mohanan - Project

FOSSEE - IIT Bombay

- Developed a toolbox for **Scilab** to call functions from libraries in **Julia**, compatible with Linux and Mac
- Works even for functions from additional packages of Julia
- Worked with both Scilab's C source and Julia's C source to convert the data representations across the languages

### **Dance Choreography using Machine Learning**

Spring 2017

Hackathon - Yahoo! Japan

IIT Bombay

- Developed a **sequence-to-sequence model** and trained the neural network in **Tensorflow** to learn the map from music note sequence to dance sequence and predict dance sequence on unseen music notes
- Employs the use of **LSTMs** in the RNN part of neural network

### **Multi-Platform Chat Application**

Spring 2017

Prof. Varsha Apte - Course Project

IIT Bombay

- Developed a **Multi Threaded C++** server application using **Sockets** and clients in three different clients, Android, CLI/C++ and Web(JS)

- Developed a protocol for communication, can login/register using an **LDAP** server, supports **Instant Messaging, Friend Requests, Blocking, Group messaging**
- Used **highly secure** password hashing algorithm to store password and authenticate people

### Feedback and Reminder App

Prof. Sharat Chandran - Course Project

Autumn 2016

IIT Bombay

- A web portal to update the assignment deadlines, classes and quizzes/exams and analyse feedback data from the client **Android** app
- Server portal based on **Django** with security measures against XSS, CSRF, clickjacking etc.
- The android client makes a personalised timetable and notifies deadlines to the user and allows us to send feedback on the courses

### Restricting Playability of Copyrighted Videos

Guide: Ankit Rawat - Internship Project

Summer 2017

11TechSquare

- Developed a C# Windows Forms Application to encrypt using **Rijndael Encryption** and play videos
- Application plays encrypted files from memory without writing the decrypted data to disk
- Also tracks the number of times and where the video was left and restricts the playability

### Gesture Control Glove for Android

Institute Technical Summer Project

Summer 2016

IIT Bombay

- Developed a glove with flex sensors and motion sensors with bluetooth module
- Created an android application to connect to the glove via bluetooth and receive sensor data and process using **Dynamic Time Warping** queue based algorithm
- Implements many Android system function calls like Volume control, Brightness control etc.

## TECHNICAL SKILLS

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**Programming and Web** C/C++, JAVA, Android Dev, Python, C#, Bash, GNU Octave, VHDL and familiar with Rust, HTML, CSS, JS, jQuery, Django, Socket Programming, PHP

**Software** Experienced in Git, TensorFlow, MATLAB, SolidWorks, AutoCAD, Box2D and familiar with  $\text{\LaTeX}$ , Inkscape, gnuplot

## POSITIONS OF RESPONSIBILITY

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### Web Co-ordinator

Entrepreneur Cell

(2015 - 2016)

IIT Bombay

- Development of the College Representative Portal, NEC (National Entrepreneurship Challenge) web application and CR (College Representative) web portal
- Link of Facebook Likes and Shares to a Score assigned to each of college representatives users in the CR Portal
- Responsible for developing and updating the database for the CR portal

## KEY COURSES UNDERTAKEN

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### Computer Science

Automatic Speech Recognition\*, Artificial Intelligence\*\*, Foundations of Machine Learning, Data Analysis and Interpretation, Operating Systems\*, Computer Graphics\*, Compilers\*\*, Databases\*, Data Structures and Algorithms, Design and Analysis of Algorithms, Computer Architecture\*, Automata Theory\*\*, Discrete Structures, Computer Networks, Digital Logic Design, Logic for Computer Science, Software Systems Lab

### Others

Numerical Analysis\*\*, Social Psychology, Power Electronics, Calculus, Linear Algebra, Differential Equations

\* Course to be completed by November 2017

\*\* Course to be completed by April 2018

## EXTRACURRICULARS

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- Completed a basic course in **French Language** by Telangana State Board of Intermediate (2013 - 2015)
- Completed a basic **Japanese Language** course by the IIT Bombay International Relations Office (2015 - 2016)
- Represented hostel in **Group Dance** competition organised for Freshman by Cultural Club IIT Bombay (Sept' 2015)