Ajinkya Gorad | **140110033**
Electrical Engineering | **UG Third Year (Dual Degree)**
Indian Institute of Technology Bombay | **Male**
Specialization: Microelectronics | **DOB: 07/02/1997**

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2017	8.58
Intermediate/+2	Don Bosco Sen. Sec. School	Don Bosco Nerul	2014	95.80
Matriculation	Ryan International School	RIS,Sanpada	2012	9.80

Scholastic Achievements

- Pursuing Honours in **Microelectronics** and Minor in **Computer Science** ['15-Present]
- Branch changed to **Electrical Engineering**, respect to good academic performance ['15]
- Secured All India Rank **2751** in IIT-JEE Advanced ['14]
- Among top **0.1%** students in JEE Mains ['14]
- KVPY (Kishor Vaigyanik Protsahan Yojana) Scholar, ranked 227 over 25,000 students ['13]

Internship

1. **Embedded Systems** project at **Rinira Technologies Pvt. Ltd.** [Apr'15-May'15]
   - Our team prototyped **Centralised Attendance System** with plug and play modules for user identification (**Fingerprint** and **RFID**) to provide flexibility for consumer and promised **reduction in market cost of product by 56%**
   - Done on **AVR** platform, involved developing a **Central Server** and interfacing **GPS** (for device location) through **UART** and **Ethernet** using **SPI** protocols

Projects

- **GPS signals Simulation and Reception** [May'16-Jul'16]
  Guide: Prof. Sibiraj Pillai, Electrical Engineering,IIT Bombay
  - Worked in team of **three**, defining various aspects of the project, from **simulation to hardware testing** and successfully completing one phase of a bigger project
  - Software implementation of **GPS signal** protocol, **BPSK CDMA** using **GNU-radio**, with help of **USRP** (Universal Software Radio Peripheral) device
  - Attempted to receive GPS signals using **Active GPS antenna** with USRP, logging the data and processing for the **1ms peaks** of GPS signal using **Matlab** tool
  - Simulated the effects of **1-bit** sampling on GPS like signal with **SNR** of over -20dB, and recover databits using GPS **CA codes** in Matlab
- **Artificial Neural Network— Neuromorphic Engineering** [Dec'15-Jan'16]
  Guide: Prof. Udayan Ganguly, Electrical Engineering IIT Bombay
  - **MNIST** database and **recognition** using **IP camera** for handwritten digits, written in **python**, learning using **Stochastic Gradient Descent** algorithm
  - **Weight image classification** for learned 2 layer networks, discovered **impression of digits** on 2D **weight matrix**, and **linear combination** in **3 layer** networks
  - Simulated **Spiking Neural Network** in Matlab recognizing the pseudorandom pattern (Jun'16) as a part of learning course on **Neuromorphic Engineering**, focussing on **hardware** implementation of Neural Networks

- **Analog Signals using CPLD (Course Project)** [Feb'16-Apr'16]
  Guide: Prof. Madhav Desai, Electrical Engineering, IIT Bombay
  - Used **CPLD** programmed with **VHDL** using **Register Transfer Level** to record analog signals onto **external SRAM** and playing them back using **DAC**, successfully displaying the resultant signal on DSO
- **Portable Dual Channel Oscilloscope based on ARM** [Apr'15-Jun'15]
  - Aimed to make a cheap portable oscilloscope with promising **cost of 16 USD**
  - Prototyped **battery powered design** for portable applications with features of displaying X-Y plot, Frequency Spectrum & Signal Plot of input waveforms
  - Implemented on **ARM** Processor **LPC2148** with a **LCD Display** and code in **C**
- **Morse Code Decoder Bot (Course Project)** [Jan'15-Mar'15]
  Guide: Prof. Kavi Arya, CSE, IIT Bombay
  - Developed a bot which responds to **Morse Code Commands** received through audio
  - System developed on **Firebird-V AVR** as a part of introductory programming course
- **LC Meter (Measuring Instrument)** [Dec'14]
  - Built LC meter for calculating Inductance and Capacitance based on measured frequency of oscillation and displaying values on LCD
  - This was done on **PIC platform** with **Assembly language**

Technical Skills and Interests

- Programming Languages : C, C++, Embedded Assembly & C, Python, Matlab, PHP
- Worked on : PIC, AVR, ARM, CPLD, Arduino, TI Launchpad, Raspberry Pi
- Familiar Tools : MPLAB, uVision-KEIL, GNU-Radio, NgSpice, Atmel Studio, EAGLE, Xilinx ISE, Quartus Tools, GTK Wave, Code Composer Studio, Processing, Microsoft Office, Solid Works, AutoCAD
- Interests: Hardware implementation of Neural Networks, Internet Of Things, Wireless Technology, Embedded Systems

Positions of Responsibility

1. Convener, Electronics Club, STAB, IIT Bombay [Apr'15 -Mar'16]
   - Our group promoted **Technical Activites** in the institute by organising sessions in lecture and hostel areas, enhancing the community **reach towards technology**
   - Guided 420 freshmen in XLR8 competition, over 100 students in Line Follower competition and contributing towards regular events
2. Students Technical Activities Body (STAB), ITSP Mentor [May'16-Jun'16]
   - Mentored in successful completion of **ITSP** (*Institute Technical Summer Projects*) by guiding over 30 teams, **seeding the minds** with the technical engineering knowledge

Extra-Curricular Activities

- Love to play Soccer, Badminton and musical instruments include Guitar and Keyboard
- Won **3rd** position in **Technical Threasure Hunt**, organised by Student Techinical Activities Body)
- **1st** position by our team in **GC Crossey** (5km) under maximum participation
- Selected for **Yoga, National Sports Organisation (NSO)**