

**EDUCATION** 

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- **Indian Institute of Technology, Bombay** Mumbai, India  
*Dual Degree: Bachelor and Master of Technology, Electrical Engineering* Aug '16 – Present
  - ◇ Major CPI: 9.63 (on a 10 scale), currently ranked 7<sup>th</sup> in Department
  - ◇ Pursuing a Minor in Computer Science (CPI : 8.00/10)
- **Kendriya Vidyalaya, IIT Powai** Mumbai, India  
*High School* May '16
  - ◇ CBSE Board Qualifying Exam Score: 95.2%

**ACADEMIC PROJECTS AND INTERNSHIPS** 

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- **Vehicle Routing Problems** [May' 18 - June' 18]  
*Guide: Prof. Ankur Kulkarni, Systems and Control Engg., IIT Bombay* Summer Project
  - ◇ Studied Programming formulations of **Travelling Salesman Problem** and Vehicle Routing problems
  - ◇ Learnt **Integer Programming** to develop Mathematical formulations of discrete optimization problems
  - ◇ Working on an Integer Programming model for a Corporate **Cab Fleet** Problem
- **Baby Image Segmentation** [Dec' 17]  
*Research Intern at Cradlewise* Chigru Innovations, Bangalore
  - ◇ Explored **image processing** techniques. Devised methods to **segment body parts** in baby images. Compared results obtained through different approaches
  - ◇ Analyzed **Point Cloud Data** using the Python libraries **OpenCV, numpy and Matplotlib**
- **Offside Detection in Football** [June' 17- July' 17]  
*Institute Technical Summer Project* IIT Bombay
  - ◇ Designed a system that processes a video feed to determine whether an offside occurred by **tracking movements** of the numerous players and the position and acceleration of the ball in play
  - ◇ Learnt the use of **OpenCV library** in Python, applied this knowledge to track movement of objects
  - ◇ **Compared Algorithms** to optimize processing and increase the accuracy of offside detection
- **Digital Reaction Game** [March' 18]  
*Guide: Prof Madhav P. Desai* Course Project, IIT Bombay
  - ◇ Wrote a Game in VHDL that Recorded the time required by a player to react to a LED light that Blinked at Unpredictable Intervals. Implemented the Design using an FPGA (**Altera MAX V**) and an LCD
  - ◇ Used an **RTL description** of numerous Interacting systems including an LED Controller, a **Pseudo-Random** Number Generator and an LCD controller
- **Electronic Stethoscope Frontend** [March' 18]  
*Guide: Prof Siddharth Tallur* Course Project, IIT Bombay
  - ◇ Designed and Assembled an instrumentation circuit to **Amplify Heart Sounds** while Filtering out Noise
  - ◇ Applied the **Sallen Key Filter** Topology to implement a second order Filter of desired pass-band. Project allowed Heart Beats to be visualised on a Digital Oscilloscope
- **Japan-India Linkage Program** [June' 18]  
*ILDP Start Program: Two Week Workshop* Hiroshima University, Japan
  - ◇ Introduced to cutting edge **Japanese Research** in the areas of High Speed Computer Vision, Biomechatronics, Nano-Fabrication of Semiconductors and Organic Solar cells
  - ◇ Underwent a study of Major Industries in Hiroshima including **Mazda Motor Corporation**

## KEY COURSES

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- **Electrical Engineering:** Network Theory, Analog Circuits<sup>L</sup>, Digital Design<sup>L</sup>, Power Electronics, Microprocessors<sup>\*L</sup>, Communication Systems<sup>\*L</sup>, Signal Processing<sup>\*\*L</sup>, Control Systems<sup>\*\*L</sup>
- **Computer Science:** Data Structures, Computer Networks, Machine Learning\*, Image Processing\*
- **Math:** Vector Calculus, Linear Algebra, Data Analysis, Complex Analysis, Partial Differential Equations
- **Miscellaneous:** Economics, Health Psychology, Introductory Biology, Introduction to Psychology\*

<sup>L</sup>Accompanied by Lab    <sup>\*</sup>To be Completed by November'18    <sup>\*\*</sup>To be Completed by April'19

## TECHNICAL SKILLS

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- ▷ **Experienced:** Python, C/C++, MATLAB, VHDL, Git, Spice, L<sup>A</sup>T<sub>E</sub>X
- ▷ **Familiar:** AutoCAD, SolidWorks, Eagle, Wireshark, GNUplot

## SCHOLASTIC ACHIEVEMENTS

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- Received the Japan Student Services Org. (**JASSO**) scholarship for short term study in **Japan** [2018]
- Awarded **AP Grade** in Electronic Devices Lab: Awarded to students in the top 2% of a course [2017]
- Obtained a position among **National top 1%** in National Standard Exam in **Physics** [2016]
- Stood **1st in Mumbai** with an **All India Rank 9** in KVS Junior Mathematics Olympiad, [2014]  
Selected for Indian National Mathematics Olympiad (INMO) camp at Chennai
- Awarded the Kishore Vaigyanik Protsahan Yojana (**KVPY**) fellowship with a **rank of 365** [2014]  
in the all India merit list. As Fellow attended the prestigious **Vijyoshi Sience Camp**.

## EXTRA CURRICULAR

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### Institute Sports Events Convenor

April 2017 - March 2018

#### IIT Bombay Sports

- Part of a 17 member team **selected from 91 applicants** via a rigorous procedure comprising of SOP, peer reviews and interviews
- As a member of the team, responsible for **conducting events** organised by the Sports Council
- Part of the **Squash Council**, a three-member team headed by the Squash Secretary that is responsible for conducting all squash related events in the institute

### Institute Sports Mentor

Sep 2017 - March 2018

#### IIT Bombay Sports

- Mentored **36 Undergraduate** Freshmen and acted as their first point of contact for all sports activities
- The Initiative **boosted** the number of Freshers participating in Sports

Squash	◆ Secured <b>1st place</b> among 14 hostels for two consecutive years in Inter-Hostel Squash General Championship (Squash GC)	[2016,17]
	◆ Won <b>Silver Medal</b> among 32 participants in Freshmen Squash Open	[2017]
	◆ Selected for the <b>Inter IIT</b> Squash Camp: Organised for Top 8 players of the institute	[2016,17]
	◆ Acquired a Squash <b>National Ranking of 46</b> in the Under 15 category as a result of participation in open tournaments including Bombay Gym. Maharashtra Open	[2013]
Others	◆ Created an <b>RC Plane</b> and a Bluetooth Remote Controlled Car to participate in Institute wide Hobby Competitions	[2016]
	◆ Achieved Intermediate Level certification in <b>Swimming</b> from IITB Gymkhana	[2012]
	◆ Completed a 60 hour course in <b>French</b> , awarded certification from the French Consulate for successful completion of the course	[2009]