



**Deven Bansal**  
**Electrical Engineering**  
**Indian Institute of Technology, Bombay**

**190070019**  
**B.Tech.**  
**Gender: Male**  
**DOB: 19-10-2001**

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2023	
Intermediate	CBSE	St. Fateh Singh Convent School, Maur Mandi	2019	91.00%
Matriculation	CBSE	St. Xavier High School, Rampura Phul	2017	9.6

## Scholastic Achievements

- Secured **All India Rank 219** in **IIT-JEE Advanced** out of 245,000 candidates. (2019)
- Secured **All India Rank 201** in **JEE-Main** out of 1.2 million candidates. (2019)
- Secured **Worldwide Rank 295** in **Kick Start Round E, Google's Coding Competition**. (2021)
- Achieved rank **Expert** in online competitive programming website **Codeforces**. (2021)
- Awarded **KVPY** fellowship for securing **All India Rank 64** in the Kishore Vaigyanik Protsahan Yojana (2018)
- One of the **top 25 students in the country** invited to attend the Selection Camp for **International Olympiad on Astronomy and Astrophysics** hosted by Homi Bhabha Centre For Science Education. (2019)
- Scored **446 out of 450** in **BITSAT** (Birla Institute of Technology and Science Admission Test) . (2019)

## Internships

### IoT based Innovative baitbox

Summer 2021

HiCare Pvt. Ltd | IoT Project Intern

- Worked on an **IoT** project in a **team** to invent an innovative and **cost-effective** solution to modern day pest problems, creating a new type of **WiFi** and **sensor integrated** baitbox.
- Implemented a highly cost saving infrastructure for the device using **efficient mesh networking**.
- Increased Practicality** and Battery life of the product by programming the device to conserve battery while performing the required functions effectively, including sending **server requests** to log the data.

### Wine Review App

Winter 2020

Sahu Technologies | App Development and Data Science Intern

- Worked on a **new app** for providing efficient wine quality review, and **suggesting the quality** of new kinds of wines.
- Implemented the **machine learning** prediction model using **python libraries numpy, pandas, seaborn and matplotlib**, achieving an accuracy of **85%**, and **integrated** the same with the application.

## Technical Projects

### Vlogshot (Play Store) | Social Media App using Firebase and Flutter

Summer 2021

Self Project | App Development

- Developed a **cross platform android** and **iOS app** using **Flutter SDK** in integration with **Firebase**.
- Implemented **user sign-in** and **sign-up** using efficient **authentication** through **Firebase backend**, along with **full cycle management** built into the app, with use of complex **Data Structures** for items stored on the server.
- Created an **interactive and fully functional frontend** using **dart**, with features to create a post, delete a post, edit profile and follow other users along with **special functionality** for implementing a **collection of vlogs**.
- Programmed backend with **Java** to perform tasks such as updating server data on various actions performed by users, thus keeping the feed received by users **synced in real time** across all devices.

### Object Sensing Gun

Summer 2020

Institute Technical Summer Project

IIT Bombay

- Created a low cost apparatus of **Autonomous gun** using **Arduino modules** to capture live images of surroundings.
- Employed a custom **Convolutional Neural Network** to detect shapes from the real-time image even in low light.
- Explored different algorithms of **Computer Vision** including **Yolov3** and **Hough Circle**.

### XLR8 Remote Controlled bot

2019

Electronics and Robotics Club

IIT Bombay

- Developed an **App Controlled Wireless Bot** for a competition, competing against **more than 90 teams**.
- Analyzed the **Differential mechanism** for steering and implemented it along with a **Bluetooth module integrated with an IC** for wireless motion for a 4-wheel drive taking into account the tasks required.

## Radio Controlled Plane

2019

*Aeromodelling Club*

*IIT Bombay*

- Engineered the design of **Radio Controlled Plane** and utilized brushless DC motors, electronic speed controllers, servo motor and lithium polymer battery to assemble a electronic circuit for it.
- Designed custom **airfoil & fuselage** to increase the lift coefficient and decrease the weight of the plane.
- Calibrated the final model and performed various maneuvers such as **Inside Loop and Inverted Flight**.

## Lab Projects

---

### Musical Tone Generator | VHDL

2021

*Digital Circuits Lab | Guide: Prof. Maryam Baghini | IIT Bombay*

- Designed an **FSM** using **Behavioural modelling** that plays musical tone on a **Krypton board** using combinational circuits and architectures programmed using **structural VHDL**.
- Performed simulations on all possible inputs using scan chains on **TIVA-C board** to verify it.

### Whac-A-Mole Game on Pt-51 | Embedded C

2021

*Microprocessors Lab | Guide: Prof. V. Rajbabu | IIT Bombay*

- Programmed the **Atmel AT89C51** Micro-controller in Embedded C using **Keil Vision** and **Flip** softwares to simulate a reaction time game with a 16x2 LCD display as the interface.
- Implemented a custom **Linear Feedback Shift Register (LFSR)** to generate a pseudorandom number series.

### Regulated Power Supply

2019

*Electrical Engineering Practice | Guide: Prof. Joseph John*

*IIT Bombay*

- Designed and assembled an electronic circuit on a Printed Circuit Board to provide a constant DC voltage.
- Applied **IC 7805** and **IC 7905** to get the **+12V** and **-12V DC** output supply from the rectified wave.
- Employed a **Zener diode** in reverse bias into the **+12V, -12V DC** output to get **+5V** and **-5V DC** supply from rectified wave output, which showed more than **99% accuracy**.

## Technical Skills

---

#### Programming

C/C++, Dart, Kotlin, Python, VHDL, Julia, MATLAB, Java, Embedded C

#### Software

Flutter, Firebase, Android Development, Git/Github, Jupyter, Arduino, SolidWorks

#### Packages

OpenCV, Matplotlib, NumPy, Pandas

## Positions of Responsibility

---

### Marketing Co-ordinator | TechFest

May 2020 - Dec 2020

*Asia's Largest Technical Fest with a footfall of over 175 thousand people*

*IIT Bombay*

- Collaborating with **100+ neurologists** and **Mar de Somnis**, a global non-profit organization to train teachers in **150+ schools** to respond to epileptic seizures, under the aegis of **HEAL**, a social initiative.
- Assisting in the implementation of **HOPE**, a social initiative by Techfest on Mental Health Awareness, overseeing **150+ virtual workshops** to sensitize college students in association with **10+ NGOs**.
- Ideating and developing logistics of **WeCare**, a social initiative by Techfest, IIT Bombay to spread awareness about **Animal Welfare Laws**, organizing workshops in **150+ schools** all over India.
- Managing **100+ College Ambassadors** from **30+ universities** across India to conduct competitions.

## Key Courses Undertaken

---

#### Data Structures

Algorithmic Toolbox - by University of California San Diego (Coursera)

#### Electrical Engineering

Probability and Random Processes, Digital Systems, Electronic Devices, Signals and Systems, Control Systems, Foundations of VLSI CAD\*

#### Mathematics

Differential Equations-II, Linear Algebra, Complex Analysis, Calculus

#### Lab Courses

Power Engineering Lab, Analog Circuits Lab, Microprocessors lab, Digital Circuits Lab, Communications Lab\*, Control Systems Lab\*

#### Miscellaneous Courses

Economics, Computer Programming and Utilisation, Quantum Physics and Application, Physical Chemistry, Organic & Inorganic Chemistry

\* To be completed by Dec '21

## Extracurricular

---

- Implemented **IoT Smart home** functionality, in own house with integration of **Alexa and WiFi modules**.
- Completed a year long professional course in **Volleyball** offered by the **National Sports Organisation**.
- Learned about **Multicopters, thrust vectoring** and **Flight Controllers** using theory as well as practical experiments and custom made working models of **Quadcopter, Dualcopter** with different real-life applications.
- Planned and managed **games and street performance** as an organiser in **TechFest 2019**.