

# Dhruv Kanti Bhanushali

Sophomore, Engineering Physics (EPH),  
Indian Institute of Technology, Roorkee  
(+91) 8171615670  
dhruv.uph2015@iitr.ac.in



## Education

Year	Institute - Board	CGPA / Percentage
2015 –	Indian Institute of Technology, Roorkee – <i>B. Tech. in Engineering Physics</i>	7.706 / 10
2012 – 2014	Jaipuria School, Navi Mumbai – <i>Class XII (PCM + Computer Science)</i>	91.2%
2004 – 2012	Seventh-Day Adventist Higher Secondary School, Navi Mumbai – <i>Class X</i>	95.8%

## Projects

Analysis of electron cloud densities in particle accelerators – *High-energy accelerator Physics*

**Supervisor:** Dr. Puneet Jain, Associate professor, Department of Physics, IIT Roorkee

The aim of the project is to analyze and formulate a theory explaining the density of the photoelectron cloud formed in the tube of a particle accelerator due to photons emitted by accelerated charges.

Augmented virtual keyboard – *Electronics and computer programming*

This project aims to create a keyboard that can be projected onto any flat surface and then uses multiple sensors and computer vision to detect keystrokes.

It uses a grid of LED beams that reflect off the fingers to detect points of touch by IR cameras. OpenCV is used to identify the coordinates and the relevant touch signal is issued.

LecTut – *Android app development*

Developed an Android app of LecTut, the Intranet study portal of IIT Roorkee, used by faculty and students to share and collaborate on study material such as lecture slides and notes, to improve its accessibility from smartphones.

**Backend:** JSON API in Django (Apache + mod\_wsgi)

**Frontend:** Client application on Android

IJAS2017 – *Website development*

Developed the website of Indo-Japan Accelerator School 2017, IIT Roorkee, in HTML and CSS with a bit of JavaScript. This website contains information about IJAS, previous' IJAS material and a form for registration.

**Static:** HTML + CSS + jQuery

## Positions of responsibility

Indo-Japan Accelerator School – *Local organizing committee member*

Core member of the local organizing committee of IJAS2017, credited with building and maintaining the official website of the school as well as providing on-site support when the school is in session.

## Skills

**Software applications:** Wolfram Mathematics, MathWorks MATLAB + Simulink, National Instruments Multisim

**Computer languages known:** Python and Java (including scientific libraries and popular frameworks)

**Human languages known:** English (SRW), Hindi (SRW), Kutchi (S), Marathi (SRW), Gujarati (SR)

## Courses taken

### Physics courses

**PHN-008:** Electromagnetic theory

**PHN-102:** Analog and digital electronics

**PHN-104:** Thermal and statistical Physics

**PHN-207:** Mechanics and relativity

**PHN-209:** Mathematical Physics

**PHN-211:** Quantum Physics

### Related courses

**MAN-001:** Mathematics-I

**MAN-010:** Optimization techniques

**EEN-112:** Electrical sciences

**MIN-108:** Mechanical engineering drawing

**PHN-103:** Computer programming

**PHN-205:** Engineering analysis and design

**PHN-204:** Atomic, molecular and laser Physics  
**PHN-206:** Elements of condensed matter Physics  
**PHN-208:** Nuclear Physics and applications  
**PHN-210:** Microprocessors and peripheral devices  
**PHN-214:** Applied Optics

**MTN-105:** Electrical and electronic materials

### Achievements

- Ranked 3110 (GEN) among about 1.5 lakh (equivalent to 150 thousand) students in JEE Advanced.
- Successfully completed two apps overnight as a part of code.fun.do 2016 and 2017.
- One of the most prolific developers in IMG (and therefore, in IIT Roorkee).
- Scored top grades in all computing courses.

### Interests

Apart from Theoretical Physics, development I am also interested in software. I like to unwind with a good film or TV episode. You'll find me plugged to my music almost all the time. I also like to read (fiction) and write (non-fiction).

### References

**Dr. Puneet Jain**

Assistant professor,  
Department of Physics,  
IIT Roorkee

**Dr. Rajesh Kumar**

Assistant professor,  
Department of Physics,  
IIT Roorkee

### Details:

For further information, please contact me via any of these social media:

GitHub Portfolio	<a href="https://dhruvkb.github.io/">https://dhruvkb.github.io/</a>
GitHub	<a href="https://github.com/dhruvkb/">https://github.com/dhruvkb/</a>
LinkedIn	<a href="https://www.linkedin.com/in/dhruvkb/">https://www.linkedin.com/in/dhruvkb/</a>
Facebook	<a href="https://www.facebook.com/dhruv.k.bhanushali/">https://www.facebook.com/dhruv.k.bhanushali/</a>