# Amey Gaikwad

*Indian Institute of Technology- Bombay*

*#74 Hostel 2*
*IIT Bombay,Mumbai*
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## Education

2015-present **Indian Institute of Technology - Bombay**, *Mumbai*.
B.Tech in Engineering Physics, Minor in Mathematics, *CPI* - **9.83/10.0**. **Ranked 1st in the Physics Department** and among the top 10 in the Institute.

2013-2015 **Intermediate/+2**, *Pace Junior Science College*, Nerul, Percentage - 94.95.
Topper in Maharashtra Board in **Physics** (100/100) and **Electrical Maintenance** (200/200)

2013 **Matriculation**, *Ryan International School*, Kharghar, Percentage - 96.7.

## Research Internship

Summer 2017 **ICTS SN Bhatt Memorial Excellence Fellowship Program - Instantons and Monopoles**.
*Dr. Pallab Basu*, Faculty, String group, ICTS-TIFR

- Confinement: Instantons, solitons and monopoles in Non Abelian gauge theories.
- Report: https://github.com/ameypg16/Resume/blob/master/Amey-Report-SNBhatt.pdf

December 2016 **National Program on Differential Equations(NPDE)-Multistablity of planar bistable liquid crystals**.
*Prof. Neela Nataraj*, Department of Mathematics, IIT Bombay

- Finite Elements Method and the Newton Galerkin approximation to analyse what drives the normal bistable liquid crystals into multistability.
- Report: https://github.com/ameypg16/NPDE-Final-D1/blob/master/Science.pdf

## Course Projects

Spring 2017 **Music Synthesis**.
*EP 226 - Waves,Oscillations and Thermodynamics*

- Developed a code to tailor a song from the bare essentials - the frequency of the notes/chords involved and the duration.
- Report: https://github.com/ameypg16/Resume/blob/master/music-synthesis-report.pdf

Spring 2017 **3 body Collider Simulation**.
*EP 230 - Electronics Lab III*

- Developed a code in VHDL using an FPGA board to simulate an animation involving 3

bodies.
- Project Report :
https://github.com/ameypg16/Resume/blob/master/FPGA_project_3_body_collision.pdf

Autumn 2016 **Chaos in Cryptography**.
*PH 542 - Non Linear Dynamics*

- Analyzed the topological similarities between cryptography and chaos theory and how chaos can be used in cryptography.
- Project Presentation: https://github.com/ameypg16/Resume/blob/master/NLDproject.pdf

## Academic Achievements

2015 **Awarded the Institute Academic Prize** by IIT Bombay for the year 2015-2016 (**3rd in the Institute - CPI-9.94)**

2015 Secured an **SPI of 10.0** in the first semester

2015 Awarded **AP** grade in Calculus and Numerical Analysis

2015-2016 **Department Rank 1** in the Physics Department

2015 Topper in Maharashtra Board in **Physics** (100/100) and **Electrical Maintenance** (200/200)

2014-2015 Qualified in **National Top 1% in NSEP and NSEA**

## Scholarships

2015 Awarded eligibility for **INSPIRE Scholarship** (by qualifying within top 1% of Maharashtra board at class XII – March 2015)

2013 Kishore Vigyan Protsahan Yojana **(KVPY)** awarded by Department of Science and Technology, India

2011-2012 National Talent Search Scholarship **NTSE** awarded by the National Council for Educational Research and Training.

## Computer Skills

Programming C++, Python, Java, VHDL

Science Numpy, Scipy, Matplotlib, MATLAB, Octave, Mathematica, Gravipy

Softwares LaTeX, Solidworks, AutoCAD, Quartus(FPGA), OriginPro

## Key Courses

Physics Non Linear Dynamics,Special and General Relativity, Classical and Quantum Mechanics,Electromagnetism, Data Analysis and Interpretation,Thermal Physics, Wave, Oscillations,Optics

Mathematics Calculus, Linear Algebra, Differential Equations, Complex and Real Analysis, General Topology, Numerical Analysis

Others Introduction to Electronics, Digital Systems