# KUSHAGRA CHANDAK

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## EDUCATION

**International Institute of Information Technology, Hyderabad** Aug 2014 - Present
*Bachelor of Technology in Computer Science and*
*MS by research in Computational Natural Sciences* *Hyderabad, Telangana*

· Current CGPA: 8.5/10

**Samrat Public School** Jul, 2013 - Apr, 2014
*Senior Secondary School (XII), CBSE* *Ajmer, Rajasthan*

· Percentage: 93.6%

**Maheshwari Public School** Jul, 2011 - Apr, 2012
*Secondary School (X), CBSE* *Ajmer, Rajasthan*

· CGPA: 10/10

## EXPERIENCE

**Weizmann Institute of Science** June 2017 - July 2017
*Research Intern* *Rehovot, Israel*

· Worked with the Heavy Ion Physics Group as a Kupcinet-Getz student. Supervisors: Prof Alexander Milov and Dr. Petr Balek.
· Evaluated charged hadron spectra of p+Pb collisions at 8 TeV recorded with the ATLAS detector at the LHC, CERN in Nov-Dec, 2016.

**IIIT Hyderabad**
*Teaching Assistantships*

· **Teaching assistant for a course in Quantum Mechanics, Symmetry and Spectroscopy** for a class of about 20 students. Aug 2017 - Present
· **Teaching assistant for Math-2** which includes Linear Algebra and Group Theory in a team of 9 students for a class of about 200 students. Jan, 2017 - Apr, 2017
· **Teaching assistant for Math-3** which includes Complex Analysis, Probability and Statistics in a team of 8 students for a class of about 200 students. Aug, 2016 - Nov, 2016

## RESEARCH PROJECTS

**Charged hadron spectra of p+Pb collisions at 8 TeV** Jun, 2017 - Jul, 2017
*Summer Project at Weizmann Institute* *Rehovot, Israel*

· The task was to do first real data analysis of the recent p+Pb collision dataset for the highest ever energy of 8 TeV for such collisions and produce spectra for charged hadrons. Moreover, physics of heavy ions, detectors and colliders was introduced.

**Theory behind Higgs boson production, basics of QFT and GTR** Jan, 2017 - Apr, 2017
*Honors Project* *IIIT Hyderabad*

· The mathematical theory behind Higgs boson production at the LHC was understood along with the basics Quantum Field Theory and General Theory of Relativity. Dark matter, dark energy, inflation and other cosmology related concepts were also introduced.

**Standard Model and discovery of Higgs Boson** Aug, 2016 - Nov, 2016
*Honors Project* *IIIT Hyderabad*

· The aim was to understand the discovery of standard model Higgs boson at ATLAS and CMS experiments and learn the basics of particle physics.

## COURSE PROJECTS

**The automated travel agent: Hotel recommendations using ML** Aug, 2016 - Nov, 2016
*Statistical Methods in AI. Supervisor: Dr. Avinash Sharma*

· Statistical methods were employed to recommend hotels to users using Bayes' classification and SVM.

**Donkey Kong using pygame** Aug, 2015 - Nov, 2016
*Structured Systems Analysis and Design. Supervisor: Dr. Raghu Reddy*

· A minimalistic physics engine was developed to simulate different features like jumping, running etc using the python library pygame.

**Aarogya - a web portal for health center in the university** Jan, 2015 - Apr, 2015
*IT Workshop. Supervisor: Mulualem Teku*

· A web portal that helps in creating appointments with university doctors was built in web2py using python, HTML, CSS and MySQL.

## TECHNICAL SKILLS

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|---|---|
| **Computer Programming** | C, C++, Python, Bash scripting, Matlab |
| **Web Development** | HTML, CSS, JavaScript |
| **Computer Graphics** | OpenGL, WebGL, Pygame |
| **Typesetting** | LaTeX, Open office |
| **Platforms** | Linux (Ubuntu, Fedora), Windows |
| **Computational Science** | VMD, NAMD, Firefly (PC-Gamess) |
| **Others** | Git, SQL, MVC web frameworks (Django, Web2py) |

## ACADEMIC ACHIEVEMENTS

· Dean's and Merit List award for Spring-15, Monsoon-15 and Spring-16 semesters in the university.

· Ranked in top 0.3% (amongst 1,356,000 candidates) in JEE Mains - 2014 and in top 5% (amongst 126,000 candidates) in JEE Advanced - 2014.

· Distinction certificate from CBSE for securing a CGPA of 10/10 in X std.

· Received consolation prize in State Science Talent Search Examination (SSTSE) from Govt. of Rajasthan, India

## RELEVANT COURSEWORK

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|---|---|
| **Science and Math** | Electromagnetism and Optics, Classical and Quantum Physics, Quantum Mechanics, Symmetry and Spectroscopy, Linear Algebra and Group Theory, Complex Analysis, Probability and Statistics. |
| **Computer Science** | Statistical Methods in AI, Optimization Methods, Parallel Scientific Computing, Data Structures and Algorithms, Computer Graphics, Computer System Organization, Topics in ML (ongoing), Complexity and Advanced Algorithms (ongoing). |

## EXTRA CURRICULAR

· Volunteered for Aashakiran (a school run by students for nearby poor children).

· State level winner in badminton; played at national level.

· Cleared 1st year in Indian classical music (Tabla). Amateur guitar player.

· Other hobbies include listening to Indian classical and post rock music, reading (biographies) and watching thriller movies.