Kunal Kapila
Bachelor of Science
Mathematics and Scientific Computing

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Education

- **Indian Institute of Technology, Kanpur** *2014 - 2018 (Expected)*
  Cumulative Grade Point Average 9.2/10 Department rank 2 *(Among 51 students)*
- **All India Senior School Certificate Examination (AISSCE)**
  Central Board of Secondary Education (CBSE), Govt. of India; Delhi Public School, R. K. Puram
  - 98.2%; School Topper; National top 1% in Physics, Chemistry and Computer Science *2014*
  - Cumulative Grade Point Average (CGPA) 10/10 *2012*

Academic and Co-Curricular Achievements

- AIR 116 in **JEE Mains** 2014; AIR 1306 in **JEE Advanced** 2014 among 1.5 million candidates
- **Kishore Vaigyanik Protsahan Yojna** Fellow 2013, Dept. of Science & Technology, Govt. of India
- **Junior Science Talent Search Examination** Scholar 2012, Govt. of Delhi (Rank 16 out of 20000)
- **National Talent Search Examination** Scholar 2010, conducted by NCERT, Govt. of India
- Rank 29 & 54 in **ACM-ICPC Amritapuri** Onsite & Online Round 2015 respectively among 1500 teams
- **Microsoft Code.Fun.Do**
  - **Winner 2014-15**: Graphing app to plot implicit 2D Mathematical Functions for Windows Phone
  - **National 5th, Coding Milestone, Finalist Forum 2014-15**: Educational app for Windows Phone
  - **Winner 2015-16**: Front-end for open source program simulation code for Microsoft Windows
- Represented India at **Asia Pacific Informatics Olympiad (APIO)** 2014
- Qualified for & attended **International Olympiad of Informatics Training Camp** 2014

Technical Skills

- **Languages**: C (*Proficient*), C++ (*Expert*), Python (*Expert*)
- **Web Development**: HTML, CSS, Javascript, PHP, NodeJS (Express, Restify), AngularJS, BackboneJS
- **Tools**: LaTeX, Git, Vim, OpenGL, SDL, GDB, MATLAB, Visual Studio

Work Experience and Projects

- **A Succinct Data Structure for Dynamic Queries** *JAN 2015*
  Paper currently under revision. Click here for the overview
  - Proposed a new data structure "SegBit" to process queries like RMQ, RSQ and Stabbing Query
  - Based on the principle that any range can be decomposed into powers of 2
  - Iterative; Lower constant of complexity; Performs better than Segment Trees
- **Cimulator**: a Visual & Interactive Tutoring system *MAY-JUL 2015*
  Supervisor: Prof. Amey Karkare, Dept. of CSE, IIT Kanpur
  - Interpreter for C language in python, modelled memory artificially, handled external header files
  - Prompts user with corrections for runtime errors instead of crashing abruptly (unlike gcc)
  - Web interface to **simulate C codes** interpreted by Cimulator to provide visual cues to the user
  - Tested by 400 **students** taking the Introduction to Computing course in Fall 2015
- Web Developer (Intern), **Elanic**, Bangalore *DEC 2015*
  - Full stack developer: MongoDB, AngularJS and NodeJS with Restify framework
  - Built REST APIs for notification, engagement and search (using Elastic Search) modules

Positions of Responsibility

- **Student Member, Senate Undergraduate Committee**, IIT Kanpur *(2014-15) & (2015-16)*
  - Among **4** students who represent the opinions of all UG students (about 3500) on academic matters
  - Worked on proposals like remedial programme for academically deficient students, exit option for students from Bachelor's degree and semester drop be allowed for any valid reason
- **Senator, Students' Gymkhana**, IIT Kanpur *(2015-16)*
  - Among **6 elected** representatives of UG Y14 batch (800 students) to the Students' Senate
  - Responsible for attending the meeting of the Students' Senate, IIT Kanpur, the highest policy-making and legislative body of the Students' Gymkhana, IIT Kanpur