

Ayush Tulsyan

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EDUCATION

April 2018	B.Tech (COMPUTER SCIENCE AND ENGINEERING)	IIT KANPUR	7.4/10.0
April 2014	Class XII (CENTRAL BOARD FOR SENIOR EDUCATION)	B.P.S. BURHANPUR	89.60 %
April 2012	Class X (CENTRAL BOARD FOR SENIOR EDUCATION)	N.M.S.S. BURHANPUR	10.0/10.0

ACADEMIC ACHIEVEMENTS

- Secured AIR - **197** in **JEE (Advanced) 2014** among 125K Candidates
- Secured **KVPY** Scholarship 2014 under stream SX with a rank of **226**
- Secured **99.97 percentile** in **JEE Mains 2014** Test among 1.5 Million Candidates
- Received **A* grade** for exceptional performance in **Data Structures and Algorithms** course.
- Amongst top 300 students qualified for **Indian National Astronomy Olympiad 2014** conducted by HBCSE.

ACHIEVEMENTS IN PROGRAMMING

- Secured Rank **25th** in **ACM-ICPC Chennai Onsite 2016** among 120 teams and Rank **50th** in **Amritapuri Onsite 2016** among 391 teams shortlisted through previous rounds and then further qualified for **ICPC India-Final 2016**
- Secured Rank **46th** in **ACM-ICPC India Regionals, Online round 2016** among 3000 teams from over the country.
- Secured Rank **304th** in **Snackdown 2016 Online Qualifier** among 3600 teams selected among 13000 teams.
- Best Ranked 212 internationally among 8400 people in Codeforces Round 360 Div 2.
- Rating of 8402.38 for long contests on Codechef. (10 days long monthly programming contests)

PROJECTS

NACHOS OPERATING SYSTEM:

JULY '16 - Nov '16

Course Project for course **CS330A: Operating Systems**, under **Prof. Mainak Chaudhuri**

Github

- Extended** the **NachOS** operating system to perform basic operating system functions including **Fork, Join, Sleep, Exec** and **Exit**.
- Implemented and evaluated performance of various algorithms for scheduling processes including **Non-Preemptive FCFS, Shortest Job First, Pre-emptive Round Robin** and **UNIX Scheduling**.
- Implemented Shared Memory Allocation, **Demand Paging** and Page Replacement Algorithms including **FIFO, LRU** and **LRU-Clock** and analyzed their performance.

BAJA SAE, IITK MOTORSPORTS:

JAN '15 - JAN '16

Faculty Advisor: **Prof. Avinash Kumar Agarwal**, Dept of Mechanical Engineering

Report

- Amongst the 24 members of the team who worked on a **yearlong project** which involved **designing and manufacturing** an **All-Terrain Vehicle** and competed in **Baja Student India '16**, held in Noida in Jan '16.
- Lead the Chassis subsystem** during the designing phase of **3 months during summer**. **Optimized the strength and weight** of the roll cage by **virtual designing and simulation**. Intensively simulated the CAD Model for ensuring the **reliability of structure and safety of driver**.
- The Team stood **13th** in Overall ranking, **6th** in the Design event, **4th** in both Acceleration and Maneuverability event.

ONGOING PROJECTS:

- Java Compiler:** An end-to-end compiler in Python for a subset of Java Language for x86 Architecture. Implemented a parser using PLY and the route ahead is semantic analysis and machine code generation.
- Railway enquiry system with Graph based Database:** A interface for wide range of railway enquiries such as connectivity, minimum travel cost/time or reachability in a given budget/time and similar. Neo4j as the database in the backend and D3.js library for data visualisation.

OTHER MINOR PROJECTS:

- Made a **html** and a **proxy server** for GET requests in C++ as a project under Course **Computer Networks** using a Parsing Library.
- Analyzed and Suggested Improvements for **Stable Marriage Algorithm** as a project in course **Discreet Mathematics** under Prof. Rajat Mittal.

Report

POSITIONS OF RESPONSIBILITY

Feb '16 - July '16	Subsystem Head, Chassis, IITK Motorsports
Apr '15 - Apr '16	Academic Mentor (ESC101A), Counselling Service
Jun '15 - Apr '16	Student Guide, Counselling Service

TECHNICAL SKILLS

Programming Languages

C, C++, PYTHON

Programming Languages (FAMILIAR):

JAVA, HTML, CSS, JAVASCRIPT, PHP, MATLAB, VERILOG, ASSEMBLY

Software and Utilities:

GIT, L^AT_EX LINUX SHELL UTILITIES

RELEVANT COURSES

Computer Science: Randomized Algorithms*, Algorithms II, Operating Systems, Data Structures & Algorithms, Theory of Computation, Computer Organization, Compilers*, Database Systems*, Computer Systems Security*, Computing Laboratory – I & II

Others: Discrete Mathematics, Linear Algebra & Ordinary Differential Equations, Analytical Calculus, Abstract Algebra, Intro to Logic, Probability & Statistics, Electronics, Intro to Electrical Engineering, Development Economics*

EXTRA-CURRICULAR ACTIVITIES

Competed in **Code.Fun.Do 2015** and made an application which intends to smoothen out **document handling**.

Designed a Website for Institute's SAE team.

Member of team which received Best Sectional Project Award in course project of Manufacturing Processes(TA201A)