

Aditya Singh

Sophomore Undergraduate

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Education

- 2017– Present **Indian Institute of Technology Kanpur**, *CPI 9.0/10.0*.
B.Tech, Department of Mechanical Engineering
- 2015–2017 **S R Public School, Kota**, *93.4%*.
Higher Secondary Education, Central Board of Secondary Education
- 2006–2015 **O.P. Jindal School, Raigarh**, *CPGA 10/10*.
Elementary and Intermediate Education, Central Board of Secondary Education

Awards and Achievements

- Ranked within **top 0.6%** (AIR 1199) among **0.22 million students** in **JEE ADVANCE, 2017**.
- Ranked within **top 0.05%** (AIR 492) among **1.18 million students** in **JEE MAIN, 2017**.
- Adjudged **Second position** in the **State Science Seminar, 2014** on **Innovation in Agriculture for a Sustainable Future** organised by **Nehru Science Centre, Mumbai** and **Govt. of Chhattisgarh** winning a cash prize of **INR 8000**.
- Presented with **Certificate of Appreciation** from the **Association of Mechanical Engineers, IIT Kanpur** for facilitating a **Workshop on LabVIEW and its use in research** as a **speaker**.
- Successfully qualified round 1 of **DUKE TIP** (Talent Identification Program) conducted by **Duke University, North Carolina**, securing more than **95% percentile** in **Mathematics**.

Work Experience and Projects

- December 2018 **ETA Technology, Bangalore**.
 - Created a Computer Aided Design model of a **3-axis Horizontal Turning Machine** (X, Y, and A axis) capable of tangentially cutting and burnishing curved and spherical profiles with peak tolerance of 10 microns.
 - Involved in creating an animation simulating the tangential cutting movements to machine a profile with both concave as well as convex surfaces.
 - Designed a **Screw Straightening Machine** with adjustable screw dimension parameter to straighten shoulder bolts/screws.
 - The completely automated Straightening Machine has a screw self-arranging system, an induction heating mechanism, as well as a synchronized rolling mechanism to get the desired product.

- May **Department of Mechanical Engineering, IIT Kanpur, Dr. Mohit Law.**
- 2018–July 2018
- Implemented Direct Velocity Feedback strategy for active damping of machine tool vibrations through digital control in LabVIEW and NI CompactRIO Controller for a Voice Coil Actuator.
 - Built interface to load data files to simulate cutting tool instability.
 - With the above setup, **64%** reduction in amplitude of tool point vibrations was achieved.
 - Assisted in developing a LabVIEW interface for Hardware in the Loop (HiL) simulation to study regenerative chatter in orthogonal cutting.
 - Built a data acquisition interface in LabVIEW with the capability of 8 channels of Analog input modules (NI-9234). The interface provided multiple real time functions like plotting and displaying power spectrum.
- January 2019–April 2019
- TA 202: Introduction to Manufacturing Processes, IIT Kanpur, Dr. Shantanu Bhattacharya.**
- Built a Plantigrade Walking Mechanism that can be implemented to produce step walking for robots moving on slippery surfaces.
 - The project provided hands-on experience in various machining processes like turning, drilling, and milling.
- August 2018–November 2018
- TA 201: Introduction to Manufacturing Processes, IIT Kanpur, Dr. Sudhanshu Shekhar Singh.**
- Built a Double Sided Hacksaw using Scotch Yoke mechanism which can be upgraded to a multi-arm Hacksaw.
 - The project provided hands-on experience in various manufacturing processes like casting, welding, brazing and sheet metal forming.
- November 2018
- ME251: Engineering Graphics and Design, IIT Kanpur, Dr. Anupam Saxena.**
- Analyzed the functioning of major sub-assemblies of a fully functional mechanical wall clock like wheel balance and escapement.
 - Made part and assembly drawing for the same. Explored the intricacies involved in machine design and assembly.

Position of Responsibility

- 2017–Present
- Company Coordinator | Students' Placement Office.**
- Streamlined the placement and internship process for over 1200 and 600 students respectively in a 3-tier team.
 - Executed the logistics for various placement processes including Pre-Placement Talks, tests, Group Discussions and interviews.

Skill Sets

Programming Languages C/C++, LabVIEW

Software Packages

MATLAB, L^AT_EX, SolidWorks, Autodesk Inventor, Autodesk Fusion, Adobe Photoshop

Miscellaneous

- Successfully completed training as a cadet of National Cadet Corps(NCC), 2 UP COMP(TECH) REGT. IIT Kanpur.
- Volunteered for poster and graffiti painting on the walls of Open Air Theatre of IIT Kanpur.