

# Vaibhav Pratap Singh

3rd Year Undergraduate  
Department of Mechanical Engineering

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## Academic Qualifications

Year	Degree/Certificate	Institute	CPI/%
2016 - Present	B.Tech.	Indian Institute of Technology, Kanpur	7.8/10
2015	CBSE (XII)	DAV Public School, Kota	93.6%
2013	CBSE (X)	Modern School, Kota	10/10

## Key Scholastic Achievements

- Secured **All India Rank 3161** in **JEE Advanced 2016** among **1.5 Lakh** candidates
- Secured **All India Rank 7942** in **JEE Mains 2016** among **1.5 Million** candidates

## Projects

- BAJA - All Terrain Vehicle : IITK Motorsports**  
*Faculty Advisor - Dr. Santanu De, Assistant Professor, IIT Kanpur (worth INR 15 lakhs)* (Mar'18-Present)
  - Devising brakes and vehicle dynamics subsystem for BAJA (B'19) to feature in Enduro Student India 2019
  - Optimized vehicles braking parameters for panic braking conditions of 60 kmph to 0 kmph in just 2.5 secs
  - Analyzed structural integrity of disc brake rotors under mechanical & thermal loads using FEM, following design changes
  - Upgraded the wheel assembly to incorporate design changes in suspension geometry of the vehicle
- Formula Student Vehicle : IITK Motorsports**  
*Faculty Advisor - Dr. Santanu De, Assistant Professor, IIT Kanpur (worth INR 30 lakhs)* (May'17-Jan'18)
  - Formulated brake subsystem for Formula student vehicle (F'18) which participated in Formula Bharat 2018
  - Reconstructed brake actuation assembly to provide efficient braking and pedal response, manufactured in-house
  - Reorganised hydraulic systems to increase driver ergonomics and provide better serviceability to the whole vehicle
- Image Processing of Thermal Images**  
*Project Investigator - Dr. Braj Bhushan, Professor, IIT Kanpur* (Mar'18-Jul'18)
  - Administered in-built Image processing toolbox, Matlab to detect thermal signatures in a human face image data
  - Employed normalized 2-D cross-correlation to detect various feature points of a human face
- Multipurpose Machine**  
*Instructor - Dr. J.Ram Kumar, Professor, IIT Kanpur (TA202, Machining Processes)* (Aug'17-Nov'17)
  - Awarded as the Best Project of the course in the semester 2017-18
  - Led a 6 member team to build a Multipurpose Machine model capable of performing various mechanical tasks
  - Acquired hands on experience on conventional machining techniques and industrial cost analysis
- Drain Cleaner**  
*Instructor - Dr. Vivek Verma, Associate Professor, IIT Kanpur (TA201, Manufacturing Processes)* (Jan'18-Mar'18)
  - Led a team of five to build a model of drain cleaner
  - Received hands on experience on processes like casting, sheet metal forming, welding, brazing and forging.

## Positions of Responsibility

- President : Society of Automotive Engineers, IIT Kanpur** (Mar'18-Present)
  - Spearheading a 3 tier team, consisting of 40+ members; orchestrating various logistics and technical requirements
  - Formulating strategic marketing campaigns to gather funds via multiple sources; targeting a budget of INR 3 million
  - Engaging in 3 national and 1 institute level competitions and workshops via unique brand strategies
- Student Guide : Counselling Service** (Jul'17-Mar'18)
  - Coordinated with the Counselling Service and organized the Orientation Programme for 800+ freshmen
  - Helped 5+ freshers with academics through regular meetings and maintained a good rapport with them

## Technical Skills

- Programming Tools and Softwares** : C, MatLab, L<sup>A</sup>T<sub>E</sub>X, SolidWorks, Ansys, Autodesk Inventor, Photoshop, Aftereffects

## Extracurriculars

- Participated in Formula Bharat 2018 and secured 6th position in Business logic presentation event, 9th position in Design event and overall 15th position among 71 national teams
- Secured 2nd position in Design-O-Flare competition, Takneek 2017
- Secured 1st position in intra-hostel dance-drama event and 3rd position in intra-hostel group dance event, Galaxy 2017
- Participated in Robobasket, an IMU-based robot making competition in Takneek 2016