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	8.0/10
2015	CBSE (XII)	DAV Public School, Kota	93.6%
2013	CBSE (X)	Modern School, Kota	10/10

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

Key Projects Undertaken

- **BAJA - All Terrain Vehicle : IITK Motorsports**
  Faculty Advisor - Dr. Santanu De, Assistant Professor, IIT Kanpur (worth INR 15 lakhs)   (*Mar'18-Present*)
  - Formulating brakes and vehicle dynamics subsystem for BAJA (B'19) to feature in Enduro Student India 2019
  - Optimized vehicle's 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*)
  - Devised 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 Multipurpose Machine model capable of performing various mechanical tasks simultaneously
  - 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, LaTeX, SolidWorks, Ansys, Autodesk Inventor, MSC Adams, Maple

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 other 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