

# Saksham Kumar

Mechanical Engineer

M.Tech, Mechanical Systems Design  
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## Education

- 2020-now **Master of Technology, Mechanical Systems Design (Mechanical Engineering), Indian Institute of Technology Kharagpur**, CGPA – 8.67/10 (at the end of two semesters).
- 2016–2020 **Bachelor of Technology, Mechanical Engineering, Indian Institute of Technology Patna**, CGPA – 8.39/10.
- 2015 **Class XII (CBSE)**, Sir Padampat Singhania School, Kota, Percentage – 80.60 %.
- 2013 **Class X (CBSE)**, Kendriya Vidyalaya Kankarbagh, Patna, CGPA – 10/10.

## Technical Skills

- Software Skills  
MATLAB, ANSYS, Creo
- Programming Languages  
Knowledgeable in *Python*; familiar with *Javascript* and *C*.

## Major Projects

- Jan 2021-Apr 2021 **Program to Predict Failure in Composites.**  
Developed a program in Python that can calculate properties and other important characteristics of a composite material that would be formed after mixing a certain amount of fibre and matrix. It also predicts whether the failure would occur at any layer or not.
- Jul 2019-Jun 2020 **Flow Boiling in Microchannels, B.TECH PROJECT.**  
The project was in the area of high performance compact cooling techniques. Worked to design and develop an innovative new design of microchannels with an objective of achieving a very high heat transfer rate in a very confined space, for example, in electronic devices.

## Other Projects

### Harvesting Atmospheric Water Using AWH with Gasifier.

Worked on developing biomass gasification based Atmospheric Water Harvester, to harvest the enormous amount of water present as vapors in the environment.

### Structural Health Monitoring.

Involved in developing a prototype that can be used for monitoring the health of civilian infrastructure like bridges, building etc. Employed electromechanical impedance (EMI) method which is a very promising method of non-destruction damage detection.

### **Rotation Calculation in a Skewed Plate Using Python.**

Utilized Python to solve the problem of a skewed plate fixed at one side (root chord) and calculated the rotation of the tip chord relative to the root chord. This skewed plate may be used to represent the swept wing of a high-speed aircraft and therefore can have many practical applications, for example, in aerospace industries.

### **Determination of Airy Stress Function Equation for Non-Homogeneous Materials Using Python.**

Utilized Python to calculate the governing Airy Stress function equation of a functionally graded material with exponentially varying Elastic modulus for a 2D plane stress problem. Also formed the equation for a general body with two different materials in plane stress.

### **Design of Capillary Tube in Vapour Compression System.**

Involved in the development of a program for determining the design of the capillary tube for use in vapour compression system based on the requirements and the refrigerant.

### **Whiteboard Cleaner.**

Involved in the development of a light-weight and low cost whiteboard cleaner for use in the classrooms so that the time as well as the manual effort gets reduced in wiping the boards .

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## Internships

- Jun 2019-Jul 2019 **Project Internship at NBC Bearings, Jaipur.**  
Involved in the project on Starting and Running Torque in Bearings at Research & Development Department. The experiments and analysis were done for different sets of bearings using a bearing torque sensor.
- Dec 2018 **Vocational Training at Indian Oil Corporation Limited.**  
Undergone industrial vocational training at Indian Oil Corporation Limited, Barauni refinery.

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## Certifications

COURSE CERTIFICATION on *Python for Mechanical Engineers*, issued by Skill-Lync.  
WORKSHOP CERTIFICATION on *Machine Learning and Artificial Intelligence*, issued HT India Labs.

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## Position of Responsibilities

Served as the COORDINATOR of the Chess Club at IIT Patna during my B.Tech. Organized several intra-college chess tournaments and helped the chess enthusiasts to improve their game.

Served as the STUDENT MENTOR for the first year mechanical engineering students during my B.Tech at IIT Patna. Helped them get acquainted with the college studies, activities and environment.