

## Juhi Srivastava

📍 Indian Institute of Technology, Jodhpur

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## EDUCATION

**2018 – 2020**

### **Master of Technology (M.Tech.) in Metallurgical and Materials Engineering**

Department of Metallurgical and Materials Engineering, Indian Institute of Technology (IITJ), Jodhpur, Rajasthan

**CGPA:** 8.19/10

**Thesis Title:** Mechanical and Microstructural Characterization of Rolling Contact Fatigue Loaded Steel Bearing

**Advisor:** Dr. Abir Bhattacharyya

**2013 – 2017**

### **Bachelor of Technology (B.Tech.) in Mechanical Engineering**

Department of Mechanical engineering, United College of Engineering and Research (UCER), Allahabad, Dr. APJ Abdul Kalam Technical University

**Percentage:** 75.18/100

**Final Year Project Title:** All Terrain Bot

**Advisor:** Prof. Naveen Kumar

**2011 – 2013**

### **Intermediate Education (12th class)**

SRN Inter College, Ramnagar, Allahabad, Board of High School and Intermediate Education

**Percentage:** 86.4/100 ( School Topper among 300 students)

**2010 – 2011**

### **High School (10th class)**

SKS Girls High School, Sirsa, Allahabad, Board of High School and Intermediate Education

**Percentage:** 77.4/100 ( School Topper among 120 students)

## WORK EXPERIENCE

**Oct 2020-Present**

### **Junior Research Fellow**

IIT Jodhpur, Jodhpur, Rajasthan

During this appointment, I worked on designing fixtures for tensile and simple shear mechanical testing of soft polymeric materials. Since January 2021, I am working on developing a finite element sub-model for determining local stress field near alloy carbides in a M50 bearing steel subjected to rolling contact fatigue loading.

**July 2017 – Dec 2017**

### **Teaching, R.K.V.I Collage**

Lucknow, Uttar Pradesh

As a Teacher, my responsibility was to teach Mathematics to high-school students (10+2 grade).

## THESIS AND PROJECTS

**July 2019 – Aug 2020**

**M.Tech. Thesis-** Mechanical and Microstructure characterization of rolling contact fatigue loaded steel bearing, under supervision of Dr. Abir Bhattacharyya  
IIT Jodhpur, Jodhpur, Rajasthan.

The goal of my work is to quantify the fatigue damage within bearing steels as a function of RCF cycles. To characterize the subsurface fatigue damage, I have adopted a micro indentation and micro compression study-based approach along with optical and scanning electron microscopy. I have prepared specimens for microstructural characterization using an optical microscope, scanning electron microscope (SEM). I have developed a finite element (FE) model of the ball-on-v groove contact to analyze the stress field. Combined experimental and computational modeling, Dislocation cell formation model is developed which based on Dislocation assisted carbon migration theory and Neuber's rule to estimate white etching formation with the continuously evolving cyclic plastic strain amplitudes in plastically deformed subsurface regions of M50 bearing steel subjected to rolling contact fatigue (RCF) over several hundred million

.Sept 2018 –Nov 2018	<b>M.Tech. Course Project-</b> Diffusible Hydrogen Content Measurements System, as part of Mechanical Metallurgy Course, IIT Jodhpur, Jodhpur, Rajasthan The principal method for determining the diffusible hydrogen content in the test sample involves allowing hydrogen to evolve by diffusion at room temperature.
Sept 2018 –Nov 2018	<b>M.Tech. Course Project-</b> Design of Water Turbine, as part of Thermal energy conversion Course, IIT Jodhpur, Jodhpur, Rajasthan Calculated design parameters such as runner circle diameter, nozzle dimensions of a Water Wheel by varying the gross head.
Aug 2016 –April 2017	<b>B.Tech. Project-</b> All Terrain Bot, under supervision of Prof. Naveen Kumar, UCER Allahabad, Uttar Pradesh A two-mode bot capable of performing the task on land as well as in air was conceptualized, designed, assembled and tested for its performance.

## RELEVANT COURSES

### M.Tech Courses

Phase Transformation in Solid  
Plastic Deformation and Microstructure Evolution.  
Characterization of Minerals, Metals, and Materials.  
Computational Materials Engineering.  
Mechanical Metallurgy  
Fatigue and Fracture  
Metallurgical Thermodynamics and Kinetics  
Thermal Energy Conversion

## EXPERIMENT SKILLS

Metallographic Sample Preparation Leica Optical Microscope Microhardness Testing Machine  
Ametek Llyod Universal Testing Machine of 50 kN load capacity Carl Zeiss Scanning Electron Microscope

## SOFTWARE SKILLS

SOLIDWORKS  
Ansys  
Matlab, Mathematica  
ImageJ Origin MSOffice,

## WORKSHOP AND TRAINING ATTENDED

June, 2016	<b>Mechanical Workshop, N.E Railway</b> Gorakhpur, Uttar Pradesh The training motive was to provide general information about different mechanical workshops such as Machine Shop, Heat Treatment Shop, Sheet metal Shop etc. This one-month training enhanced my idea about the State-of-Technology and Plant.
June, 2015	<b>Bharat Pumps and Compressors Limited,</b> Allahabad, Uttar Pradesh The main objective of this training was to give general information about the manufacturing of heavy-duty pumps, compressors and high pressure seamless and welded gas cylinder.
Nov, 2015	<b>Drone Workshop, Society of Robotics-UGI</b> UCER Allahabad, Uttar Pradesh Described the mechanism behind Drone flight and Assembling of various parts of Drone.
Feb, 2015	<b>Industry Internship Program on Design/ Analysis/ Reverse Engineering/3DPrinting,</b> In association certified by SGT-International, Wizio, Cdtech, Wikipedia & Metawing. UCER, Allahabad, Uttar Pradesh

## **ACHIEVEMENTS**

**March, 2017** 8th Position (among 200 teams) in Menoeuver (Manual Robot) RBORACE Competition organized by Indian Institute of Technology Kanpur (IIT Kanpur), Uttar Pradesh

## **POSITION OF RESPONSIBILITY**

**2018-2020** **Teaching Assistance**

IIT Jodhpur

Responsibilities of teaching or learning support assistants include: supporting students across the curriculum.

**2018-2019** **Students Elected Representative**

IIT Jodhpur Gymkhana.

Responsible was to Bridge Communication gap between Administrative body and Students.

**2015-2017** **Member of MECHLOIIONS Tech Society**

UCER Allahabad

Organized various technical events like ROBORACE and workshop of SOLIDWORKS

## **LANGUAGE PROFICIENCY**

(WRITING & ORAL) English, Hindi

## **Nationality**

Indian