

# Shubhi Kesarwani

3rd Year Undergraduate  
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## Academic Qualifications

Year	Degree/Certificate	Institute	CPI/%
2019 - 2023	B.Tech	Indian Institute of Technology Kanpur	8.9/10
2019	XII(CBSE)	Udaya Public School, Faizabad	96%
2017	X(UP)	Canossa Convent Girls' Inter College, Faizabad	87%

## Scholastic Achievements

- Secured **first position** in **Inter IIT Tech Meet 9.0** for the project Drishtee's Tech-Led Innovation for Rural Entrepreneurship
- Got **Best Implementation Award** by Science and Technology Council IIT Kanpur for the project Audioband
- Recipient of scholarship under **Uttar Pradesh Science Talent Search Examination 2017**
- Among top 0.1% students in Physics, Chemistry and Information Practices in the Class 12th CBSE board examination

## Key Projects

- Yoga Recommendation System** | Mentor: Prof. Veena Bansal, IME Department, IIT Kanpur (May'21- July'21)
  - Collaborated with a team to develop a site for recommending Yoga based on diseases, gender, age, and level of their practice
  - Performed **web scrapping** to get information about benefits, contraindications, steps, and awareness of yoga asanas
  - Trained **ML model** using **CBOW** architecture in **NLP** for yoga recommendation and achieved an accuracy of 87%
  - Learned and implemented relational database management system(**RDBMS**) for the site using **MySQL**
- Image Processing for Crop Detection** | Mentor: Prof. Veena Bansal, IME Department, IIT Kanpur (Mar'21- July'21)
  - Developed an **ML model** for classification of the vague crop image dataset obtained from Khetipoint, an Agro-Tech Firm
  - Performed image classification using **VGG-16, GoogleNet, and AlexNet** architecture using **Keras and Tensorflow**
  - Filtered and augmented the raw image data set obtained from the firm to get a better accuracy of 88.2% from the ML model
- Audioband** | Electronics Club, IIT Kanpur (May'20- July'20)
  - Developed **ML model** for hand gesture sensing using **ultrasonic beamforming** and **acoustic reflectometry** technique
  - Implemented acoustic Beamforming on **Python Pyroomacoustics** library then integrated that on **MATLAB Indoor Simulator Toolbox** to generate room impulse response(RIR) and extracted features from that for training the ML model
  - Used ML dimensionality reduction algorithm **PCA** and **t-SNE** for data visualization and neural networks for classification
- Drishtee's Tech-Led Innovation for Rural Entrepreneurship** | 9th Inter IIT Tech Meet, IIT Guwahati (March'21)
  - Proposed a product to enhance post-harvest shelf-life of crops and save annually about 30% crop damage after harvest
  - Designed **Humidifier** and **CO2 Absorber** for maintaining optimum atmospheric condition within our product
  - The proposed solution can generate a benefit of about **Rs. 4/kg** crop and is aimed to upskill the capacity of rural youth
- Finite Element Analysis of a Truss** | Mentor: Prof. Pritam Chakraborty, Course Project, AE675A (March'21- April'21)
  - Collaborated with a team of 2 to develop **MATLAB Finite Element Analysis(FEM)** code for an 11 member truss structure coupled with steady heat conduction using **Galerkin Weak Form** and **Gauss' Legendre Quadrature Rule**
  - Analyzed accuracy of measured parameters via mesh refinement and calculated maximum force the structure can support
- Mechanical Watch** | Mentor: Prof. Nachiketa Tiwari, Course Project, ME251A (March'21-April'21)
  - Designed **CAD model** of the Mechanical Watch using **Fusion360** with particular attention to the Gear Train dimensions
  - Assembled components to get working model and animation of watch with the second, minute, hour, day, and date hands

## Technical Skills

- Programming Languages:** C/C++, Python, MySQL, HTML
- Software, Libraries and Utilities:** Numpy, Tensorflow, Keras, Pandas, Matplotlib, MATLAB, Arduino, L<sup>A</sup>T<sub>E</sub>X, Fusion360

## Positions of Responsibility

- Senior Executive, Hospitality, Techkriti, IIT Kanpur** (February'21 - April'21)
  - Transferred information linked to the tech fest to the learners of various colleges and prompted them to participate
- Academic Mentor, Counselling Service Team, IIT Kanpur** (2020-21)
  - Mentored **66 freshmen** students in acclimatizing to the academics of the institute and provided one to one mentoring
- Secretary, Electronics Club, IIT Kanpur** (2020-21)
  - Conducted **Winter Workshop** in **January 2021** on machine learning with around 200 participating students for freshers

## Extra-Curricular Activities

- Participated in Takneek'19 representing Hall 6 in the Electronics Club event **Electromania** and secured the **third position**
- Participated in Galaxy'20 in DNA club events and secured **Design and Animation(DNA) Trophy** for representing hall 6
- Participated in Galaxy'20 (a media and cultural competition) in the Film Club events as an editor of the film
- Played Basketball in the first year of my stay in IIT Kanpur as a Compulsory Physical Activity(CPA)