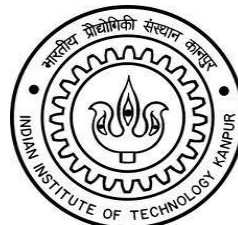




## Students' Placement Office, IIT Kanpur

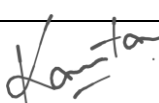


### Project Verification Form

Title of the Project	Yoga Asana Prediction and Feedback Generation
Commencement Date	4 <sup>th</sup> Jan
Completion Date	20 <sup>th</sup> April
Project Supervisor	Dr. Tushar Sandhan, EE, IIT Kanpur
Organization/Institution where the Project was accomplished	IIT Kanpur
<b>Project Description</b> (You can use extra A4 sheets in case you run out of space however the extra sheets should also have the seal & signature of the Project Supervisor or the relevant authority )	
<ul style="list-style-type: none"><li>Enhance self-guided yoga practice with a <b>deep learning model</b>, classifying yoga asanas and providing <b>real-time feedback</b></li></ul>	
<ul style="list-style-type: none"><li>Engineered hybrid <b>CNN-LSTM model</b> capturing spatial and temporal features, trained on <b>88 videos</b> from diverse datasets</li><li>Utilized <b>OpenCV</b> for video processing, <b>MediaPipe</b> for pose landmark extraction, <b>Keras with TensorFlow</b> for model training</li><li>Conducted <b>angular vector analyses</b> to compare user poses with ideal poses, and implemented a feedback mechanism</li></ul>	
<ul style="list-style-type: none"><li>Classified videos into <b>6 asanas</b>, achieving a framewise accuracy of <b>99.05%</b>, with polling improving accuracy to <b>99.66%</b></li><li>Enabled <b>precise feedback</b> by demonstrating the closest intermediate poses from input videos; comparing them to ideal poses</li></ul>	

**By appending your signatures to this form you acknowledge and agree that:**

- This form along with the certificate would serve as the official document between the project supervisor and Students Placement Office, IIT Kanpur regarding verification of the student's project work
- The student will provide additional information and documentation relevant to his/her project upon request by the Students' Placement Office
- The student has clearly defined his/her individual role in projects done in cooperation with other students, faculty, groups or company personnel.
- Incorrectly over-stating the reach, impact and/or quantitative/qualitative results of a project is unethical.
- In case of violation of any of the above rules, Students' Placement Office, IIT Kanpur reserves the right to take necessary action including de-registering the student from the placement season and reporting the misconduct to the Institute Authorities.

<b>Submitted by:-</b>	<b>Project Supervisor Details:-</b>
Name: Kaustav Dasgupta	Name: Dr. Tushar Sandhan
Roll No: 210501	Designation: Assistant Professor, Dept of Electrical Engineering, IIT Kanpur
Signature: 	Signature: