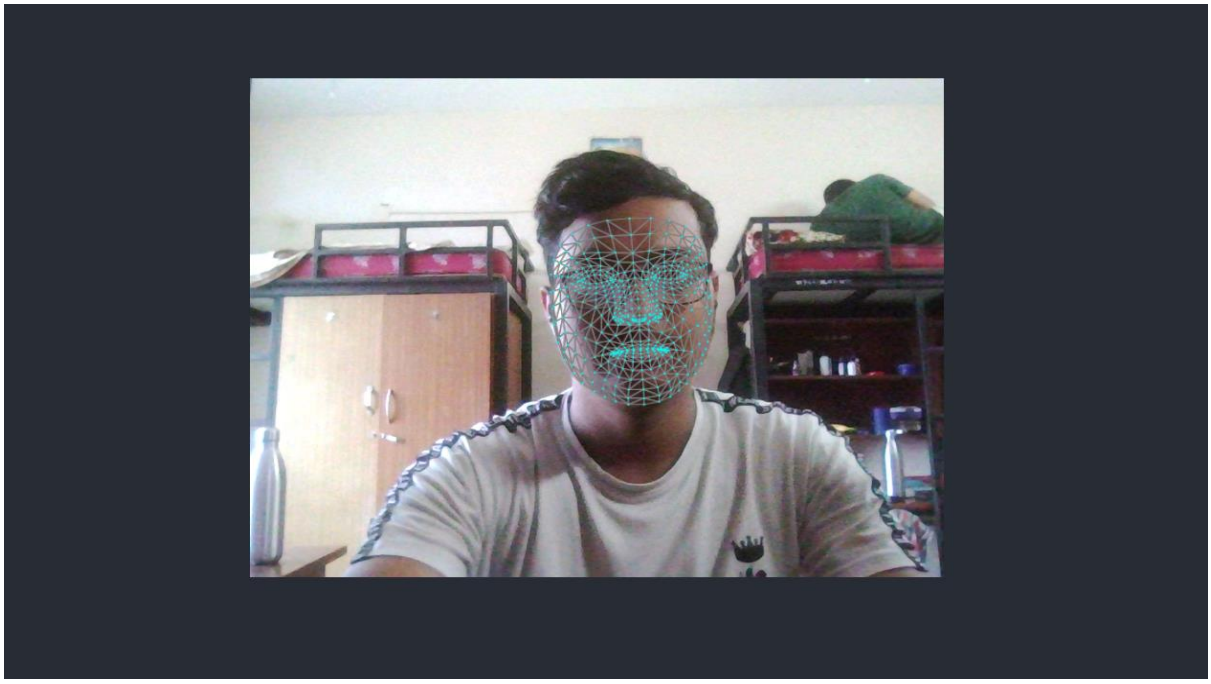
Real Time AI Face Landmark Detection with Tensorflow.JS and React



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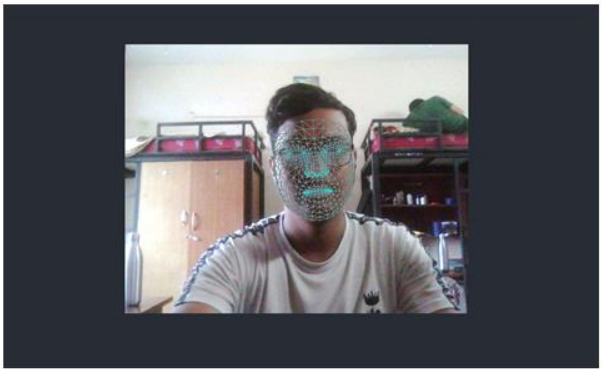
- What is facial landmark detection?
- Machine learning technique that detects different points on your face. When you combine these together you're able to generate a mesh like you can see on the right. The model in this video detects 486 3D facial landmarks to infer the approximate surface geometry of a human face.



Facemesh:

A pertained deeplearning model released by tensorflow.js which allow to perform facial landmark detection.

Steps for Implementing Pose Estimation:

1. **Install Required Packages:** Ensure you have all the necessary libraries installed, such as TensorFlow.js.
2. **Import Dependencies:** Import the required modules from the installed libraries into your project.
3. **Set up Webcam and Canvas:** Configure your application to access the user's webcam and create a canvas element to display the video feed and pose estimation results.
4. **Define References:** Establish references to the webcam stream and the canvas element within your code.
5. **Load PoseNet Model:** Load the PoseNet model from the TensorFlow.js library. This model is trained to detect human poses in images or video.
6. **Create Detection Function:** Implement a function that uses the loaded PoseNet model to detect poses in the incoming video frames from the webcam stream.
7. **Utilize Drawing Utilities:** Utilize the drawing utilities provided by TensorFlow.js to visualize the detected poses on the canvas, such as drawing skeletons or keypoints.
8. **Implement Drawing Functions:** Create functions to draw the detected poses onto the canvas, such as lines connecting keypoints to represent the human skeleton.

The image appears to be a visual representation of a process related to facial landmark detection using JavaScript and TensorFlow.js.

Key Steps:

Create a Webcam Stream: The first step involves setting up a webcam stream within a React application. This stream will provide a live video feed of the user's face.

Load Facemesh Model: The second step involves loading the Facemesh model from the TensorFlow.js library. This model is trained to detect facial landmarks.

Detect Facial Landmarks:
The loaded Facemesh model is then used to process the webcam stream and detect facial landmarks in real-time.