FitNurture Advanced Posture Detection App - User Guide

Overview

FitNurture Advanced is a posture detection application that allows users to analyze and record postural abnormalities using images. The advanced version provides the ability to fine-tune detection thresholds for various postural conditions, making it suitable for both general users and professionals who require more control over the analysis.

Key Features

- Analyze posture from single or multiple (4) views.

- Adjust detection thresholds for conditions like Kyphosis, Lordosis, Tech Neck, Scoliosis, Flat Feet, Gait Abnormalities, Knock Knees, and Bow Legs.

- Save and manage analysis results locally or upload to the cloud.

- Generate PDF reports with images and recommendations.

- Get AI-powered exercise and lifestyle suggestions.

Getting Started

1. Launch the App: Open the FitNurture Advanced app in your browser.

2. Enter Student Details: Fill in the child's name (mandatory), select age group, gender, and indicate if the subject is wearing non-body-fitting clothes.

3. Select Analysis Mode:

  - Single View Analysis: For a quick check using a side view image.

  - Multi-View Analysis (4 Views): For a comprehensive analysis using front, back, and both side views.

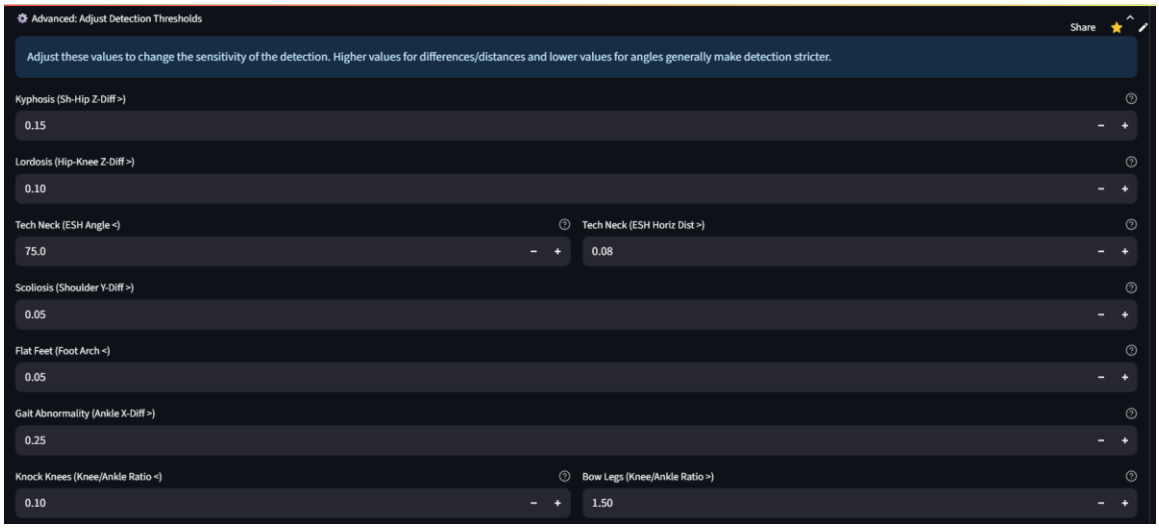
4. Choose Input Method:

  - Upload Image: Upload existing images.

  - Use Camera: Capture images directly from your device.

Adjusting Detection Thresholds

Click the " ⚙️ Advanced: Adjust Detection Thresholds" expander to reveal all adjustable parameters. Each threshold controls the sensitivity for detecting a specific postural abnormality.



Example Thresholds and Their Effects

- Kyphosis (Sh-Hip Z-Diff >): Higher value means only pronounced forward shoulder slouch is flagged.

- Lordosis (Hip-Knee Z-Diff >): Higher value means only more pronounced lower back curve is flagged.

- Tech Neck (ESH Angle <): Lower value means only severe forward head tilt is flagged.

- Tech Neck (ESH Horiz Dist >): Higher value means ear must be much more forward of the shoulder to be flagged.

- Scoliosis (Shoulder Y-Diff >): Higher value means only greater shoulder height differences are flagged.

- Flat Feet (Foot Arch <): Lower value means only very flat arches are flagged.

- Gait Abnormality (Ankle X-Diff >): Higher value means only wider foot stances are flagged.

- Knock Knees (Knee/Ankle Ratio <): Lower value means knees must be much closer than ankles.

- Bow Legs (Knee/Ankle Ratio >): Higher value means knees must be much wider than ankles.

How to Adjust

Use the number input fields to set your desired threshold for each condition.

Click "Reset Thresholds to Default" to restore original values.

Adjusting thresholds allows you to make the detection stricter or more lenient based on your needs or the population being analyzed.

Example Usage Scenarios

Scenario 1: Screening in a School

- Use default thresholds for a general population.
- Capture images for all four views for each student.
- Analyze and save results locally or upload to the cloud for record-keeping.

Scenario 2: Clinical Follow-Up

- Adjust thresholds to be stricter for follow-up on previously identified cases.
- Use single view analysis for quick checks.
- Generate PDF reports for patient records.

Scenario 3: Research Study

- Fine-tune thresholds to match study criteria.
- Use multi-view analysis for comprehensive data.
- Export all results as CSV for further analysis.

Saving and Managing Results

Click "💾 Save Result Locally" to store the current analysis in your browser session.

View all saved records in the data table below the analysis section.

Download all records as CSV for offline use.

Click "⬆ Upload All Saved Records to Cloud" to store data in the Azure SQL database (requires configuration).

Generating Reports

Click "📄 Generate PDF Report" to create a detailed report including images, detected conditions, and recommendations.

Download the PDF for sharing or record-keeping.

AI-Powered Suggestions

Click "✨ Get AI Exercise & Lifestyle Tips" to receive personalized advice based on detected conditions.

Suggestions are generated using the Gemini AI model and are included in the PDF report if available.

Tips for Best Results

- Ensure good lighting and a clear, uncluttered background.

- Subject should wear body-fitting clothes for more accurate analysis.

- Capture the full body in each image.

- Adjust thresholds as needed for your specific use case.

Troubleshooting

- If no person is detected, check image quality and ensure the full body is visible.

- If results seem too strict or lenient, adjust the relevant thresholds.

- For database upload issues, verify your cloud configuration and internet connection.

Support

For further assistance, refer to the in-app help or contact support at info@futurenurture.in.