**Dataset: 3DPW (3D Poses in the Wild)**

Link: 3DPW Dataset – MPI (https://virtualhumans.mpi-inf.mpg.de/3DPW/)

**Summary**:

3DPW is a real-world dataset for 3D human pose estimation. It includes annotated video sequences of people walking, running, and performing daily activities, with accurate 2D/3D joint positions and 3D body meshes.

**Key Features:**

-60+ video sequences recorded in outdoor scenes

-Structured as JSON files with frame-by-frame keypoints (3D coordinates of body parts)

-SMPL-based full-body 3D meshes

-Contains real-world walking scenes with accurate 3D pose annotations

-Provided in JSON format

**Key advantages:**

-Well-organized structure

-Convenient annotations

-Real-world scenarios

**Key Metrics (Lower = Better)**

Model ADE (mm) FDE (mm) VIM

LSTM-VAE 42.1 67.3 0.81

ST-GCN 39.8 63.2 0.76

**Error Rates in Pose Prediction (3DPW Dataset)**

Standard Benchmark Errors

Good Model:

ADE: 40-50mm - FDE: 65-75mm - VIM: 0.8-1.2

Critical Failure Thresholds

-ADE >100mm → Unusable predictions

-FDE >150mm → Complete trajectory failure

-VIM >2.0 → Physically impossible motions

Data-Specific Error Sources

-Annotation Errors: ~3% frames in 3DPW have minor labeling mistakes

-Occlusion Errors: 5-8% accuracy drop in crowded scenes

-Temporal Jumps: Sudden pose changes cause 10-15mm error spikes