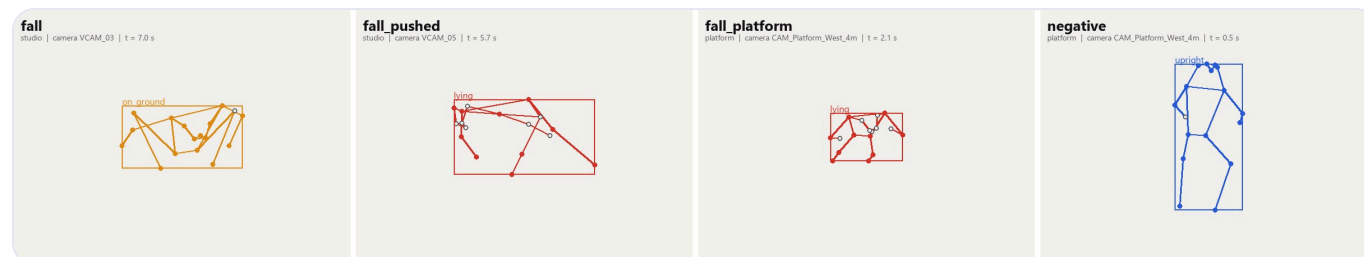


Synthetic CCTV Fall Detection Dataset

Physically simulated falls and everyday activities, each observed by 12 CCTV cameras, with COCO-17 keypoints, fall phases and exact event times. Built to train and test skeleton-based fall and person-down detectors, including falls from a railway platform onto the track.

**1,009**

simulated events

12,108sequences (12 cameras
each)**20.6 h**

2.22 M frames at 30 fps

7classes: 5 fall types, 2
negatives

● Fall classes (539 events)

fall	233	fall_collapse	40
fall_pushed	88	fall_platform	138
fall_platform_pushed	40		

● Negatives (470 events)

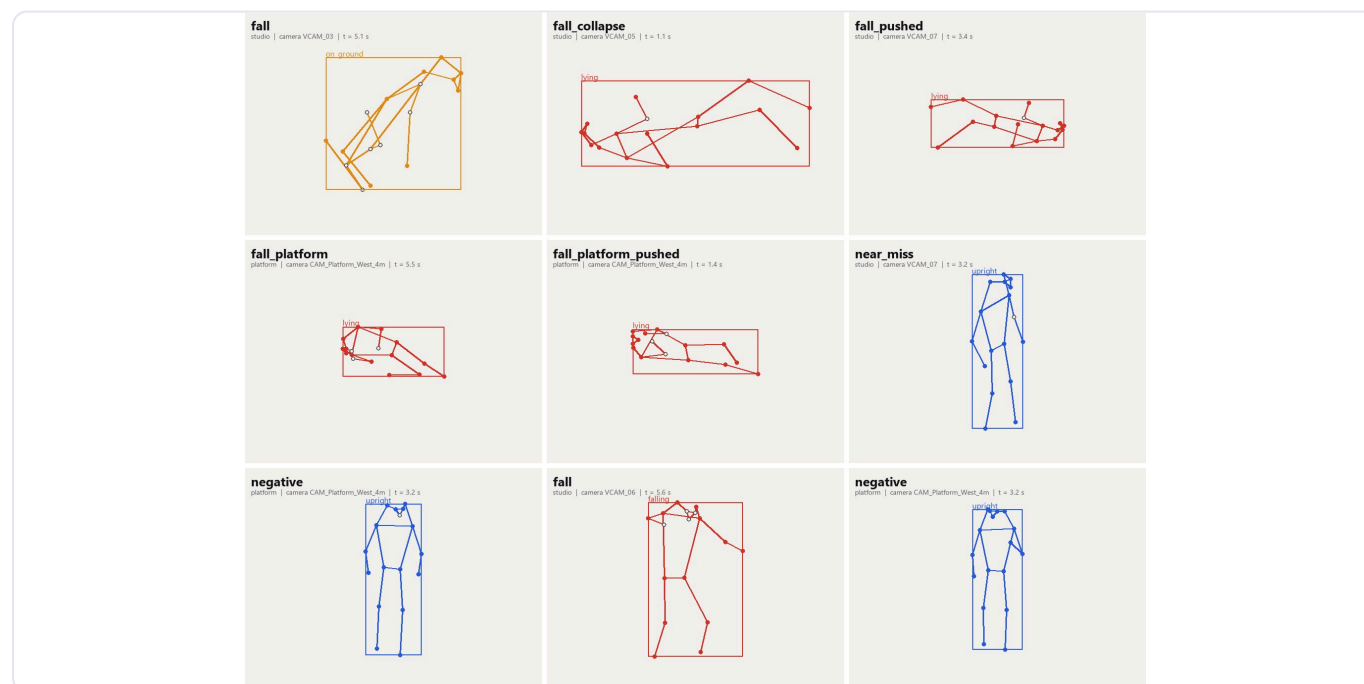
near_miss	30	negative	440
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● Annotations

- **Per frame and camera:** 17 COCO keypoints with visibility (visible / occluded by the body / outside the frame), bounding box, phase: upright, falling, lying, on_ground.
- **Per event:** fall onset, impact and motionless time; every falling segment (a slide from the edge onto the track counts as a second fall); end location on the platform or on the track.
- **Per simulation:** 3D skeleton (23 joints and 17 keypoints); camera intrinsics and extrinsics.

Xentim is a brand of TATO STUDIO sp. z o.o., ul. 28 Czerwca 1956 r. 174/28, 61-507 Poznan, Poland. Generated with Unreal® Engine (Epic Games, Inc.) and NVIDIA Kimodo (NVIDIA Open Model License; text encoder built with Meta Llama 3). Not affiliated with, sponsored or endorsed by Epic Games, NVIDIA or Meta.

● Labels at the key moment



● Scenes and cameras

Scenes	neutral studio 711, railway platform 298 events (71 end on the track)
People	one person per event, 165.6 cm mannequin
Cameras	3 fixed + 9 randomized CCTV per event; 2.5 to 5 m high, 4 to 13 m away, 12 to 28 mm lens, Super 35 sensor
Split	train 8,892 / val 1,956 / test 1,260 sequences; by base motion, so the same generated motion never appears in two splits; sideways collapses and platform pushes by simulation
Visibility	82 % of keypoints visible on average
Formats	Parquet, CSV, JSON (ZIP)

● Licence and pricing

Standard: one legal entity, all its sites, updates v1.x for 12 months, email support	€18,000
Enterprise: Standard plus affiliates, priority support and one custom scenario pack (up to 200 simulations of your scene or camera layout, within 6 weeks)	€45,000
Bundle of three Xentim datasets (falls, railway, fights)	25 % off

Free evaluation sample: 28 simulations (7 classes) x 12 cameras, 336 sequences, with preview videos (falls_v1_2_sample.zip, 21 MB). Keypoint annotations only, no RGB video. Licensed for discriminative models; use for generative AI is prohibited.

● How it was made

- Protective reflex and everyday activities: NVIDIA Kimodo text-to-motion, retargeted to the Unreal Engine mannequin.
- Impact and lying: Unreal Engine 5.8 physics ragdoll takes over when the hands reach the ground; pushes and knock-downs end in the same ragdoll.
- Release 1.2: every simulation re-run with smoother motion; automatic motion quality control on every simulation, 117 simulations with strong glitches removed; phase labels recomputed with rules v2 after a manual review.
- No real people, no personal data, no internet footage.