

Vision Zero Agent

Hours of raw footage from a conflict zone. Five seconds that matter. Real-time explosion alerts for the news desk, and the same agent watching streets and warehouse floors.

Archival film: 51 of 56 explosions found

Explosions: 91% recall - 85% precision

222 hand-checked 5 s clips from five films: B-17 raids, the RAF attack on the Tirpitz, RAF night bombing, USAAF "Special Delivery" (1946) and "Disney Bomb" (1945).

Known limit: bomb release

10% precision. Parachutes and supply drops read as bombs; a stricter prompt only reached 12%. We show it, not hide it.



RAF Sinks Tirpitz (Universal Newsreel, 1944) 01:00

Cosmos: EXPLOSION | Human check: correct



U.S. Army Air Forces - Special Delivery 02:00

Cosmos: BOMB RELEASE | Human check: FALSE ALARM (supply parachutes)

Live trigger: every blast alerted, zero false alarms

Vision Zero Agent · archival film

Alerts 3 ← Safety agent Demo video & slides

Live explosion trigger

Underwater A-bomb test, Bikini Atoll 1946 (48 s) first 80 s (16 segments) ☐ real-time pacing Start live feed

The film plays as an incoming stream: every 5 s segment goes to Cosmos Reason as it arrives. On an explosion, the segment is saved and an alert is sent.

0 1 2 3 4 5 6 7 8 9

EXPLOSION - 0:15

Segment #3 bikini_underwater

email not sent: SMTP not configured (draft below)

Cosmos: A large mushroom cloud rises from the ground, indicating a nuclear explosion.

▶ Alert email

EXPLOSION - 0:10

Segment #2 bikini_underwater

email not sent: SMTP not configured (draft below)

Cosmos: A large mushroom cloud rises from the ground, indicating a nuclear explosion.

▶ Alert email

EXPLOSION - 0:00

Segment #0 bikini_underwater

email not sent: SMTP not configured (draft below)

Cosmos: A large mushroom cloud rises from the ground, indicating a nuclear explosion.

▶ Alert email

Explosion detected bikini_underwater · 0:15
A large mushroom cloud rises from the ground, indicating a nuclear explosion.
Segment #3 · click to view

Explosion detected bikini_underwater · 0:10
A large mushroom cloud rises from the ground, indicating a nuclear explosion.
Segment #2 · click to view

Explosion detected bikini_underwater · 0:00
A large mushroom cloud rises from the ground, indicating a nuclear explosion.
Segment #0 · click to view

- Incoming film is cut into **5 s segments** as it arrives; Cosmos Reason checks each one.
- On an explosion: the clip is saved, a **toast, chime and desktop notification** fire, and an **email or webhook** goes out.
- Three films it had never seen (1957 A-bomb newsreel, 1946 Bikini underwater test, 1952 Ivy Mike): **3 of 3 blasts alerted, 0 false alarms** in 36 segments, 13 of 21 explosion segments flagged.
- Misses: the first flash before the cloud forms; colour fireball close-ups read as a sunset.

Truth: human frame check of every segment. Wikimedia Commons, public domain; sent to Cosmos only, not ingested into VSS.

Same agent, live camera archives on VAST

3,537 clips · 13 cameras

Indexed on VAST: Toronto dashcam, a New York cyclist's helmet camera, NYC and San Francisco street cameras, a highway, a neighborhood camera.

2 warehouse floors

Forklifts, AGVs and humanoid robots sharing space with workers.

The question

Where did a person come dangerously close to a moving vehicle or machine?

The answer

A ranked, human-verified incident feed with bounding boxes, plain-English alerts and written reports.

How it works

1 · VAST VSS

Ingests and segments video into 5 s clips; YOLO boxes, captions and embeddings in VastDB.



2 · Cosmos Reason

Watches each clip (on CoreWeave GPUs) with a street or warehouse safety prompt: risk 0-5, event, machine, people nearby.



3 · Checks

Consistency rule (no human near the machine means no alert); human confirm/dismiss with notes.

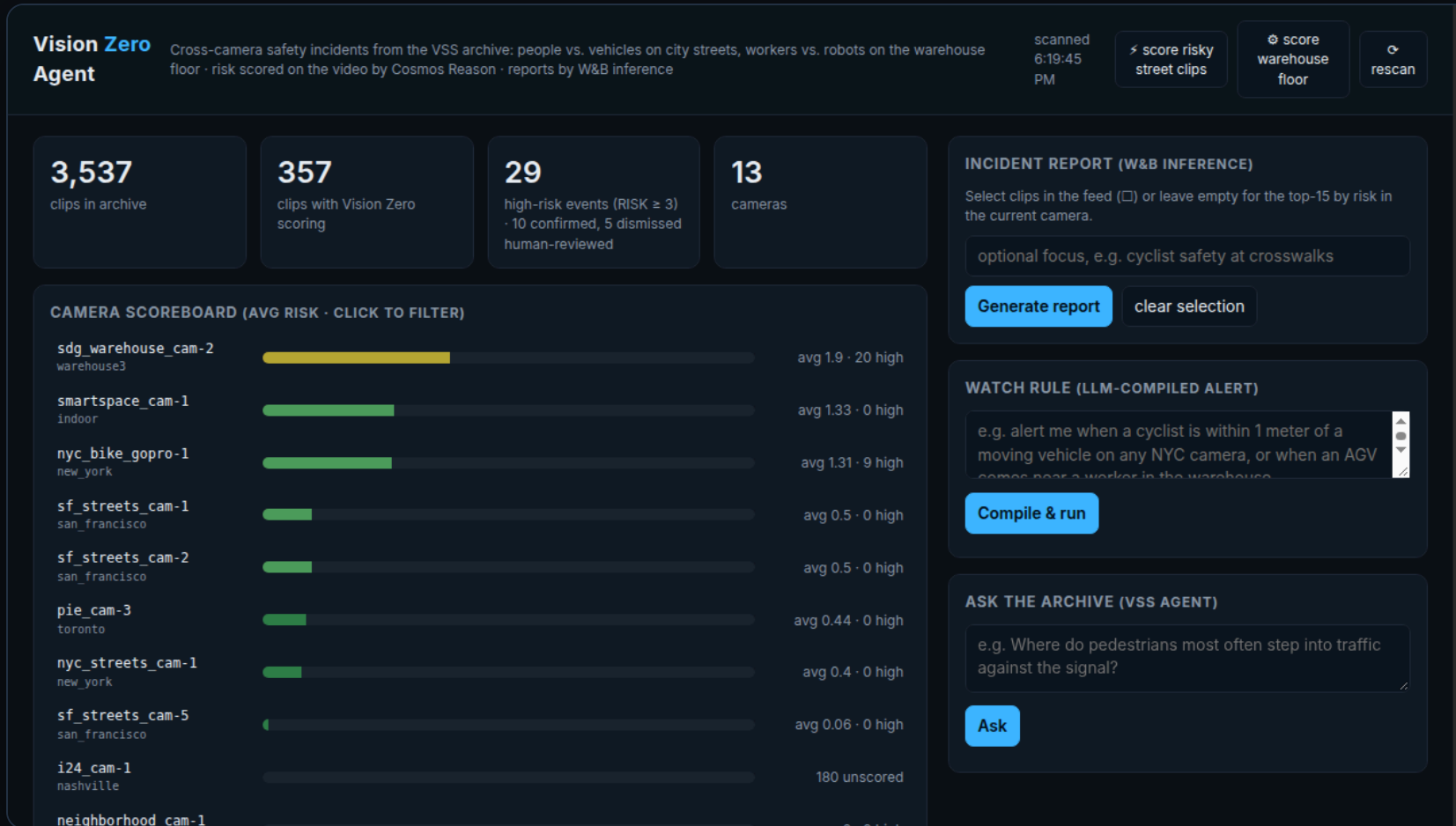


4 · W&B

gpt-oss-120b writes reports and compiles watch rules; Weave traces every call; eval runs measure accuracy.

Web app deployed on the team Kubernetes namespace behind the `/app` Ingress. Open it from workshop.thecosmoslabs.com → App.

One view of every camera



- **Scoreboard** ranks cameras by average risk.
- **357 clips** scored on the video by Cosmos.
- **29 high-risk events;** 10 confirmed and 5 dismissed by a reviewer.
- Report, watch-rule and Q&A panels on the right.

Warehouse floor: workers vs. machines

Vision Zero Agent
Cross-camera safety incidents from the VSS archive: people vs. vehicles on city streets, workers vs. robots on the warehouse floor · risk scored on the video by Cosmos Reason · reports by W&B Inference

scanned 6:43:23 PM

score risky street clips

score warehouse floor

rescan

20 matching clips, showing 20, worst first.



0:02 / 0:05

RISK 3 near_miss forklift 1 worker near

✓ reviewed video-verified

sdg_warehouse_cam-2 warehouse3 5-10s

Reviewer: Worker walks right up to the moving reach-truck forklift and is beside it as it turns; well under 1 m.

Model: The forklift moves forward while a worker walks into its path, causing the forklift to swerve and come close to the worker.

A person wearing a white shirt, gray pants, and a white cap walks toward a blue and black forklift labeled 'ATLAS' in a warehouse with gray brick walls and a dark blue floor. The

✓ ✕ select ↗



0:02 / 0:05

RISK 3 near_miss agv 1 worker near

✓ reviewed video-verified

sdg_warehouse_cam-2 warehouse3 5-10s

Reviewer: Police officer walks to the moving reach truck and crouches at its mast while it moves; contact range.

Model: A blue AGV moves forward while a police officer walks toward it, and the officer steps onto the AGV's platform as it continues moving, creating a close and

A person wearing a white shirt with the word POLICE on the back and a white hat is standing in a large, empty warehouse with gray flooring and light-colored walls. The

✓ ✕ select ↗

e.g. Where do pedestrians most often step into traffic against the signal?

Ask

- Cosmos: **RISK 3 near miss**, forklift, 1 worker near.
- **Red boxes:** people in a risky clip, from the VSS YOLO detections, synced to playback.
- **Reviewer note** outranks the model: "beside it as it turns; well under 1 m".
- 240 warehouse clips scored; 20 at RISK 3.

City streets: Vision Zero

Vision Zero Agent
Cross-camera safety incidents from the VSS archive: people vs. vehicles on city streets, workers vs. robots on the warehouse floor · risk scored on the video by Cosmos Reason · reports by W&B inference

scanned 6:43:23 PM

score risky street clips

score warehouse floor

rescan

9 matching clips, showing 9, worst first.



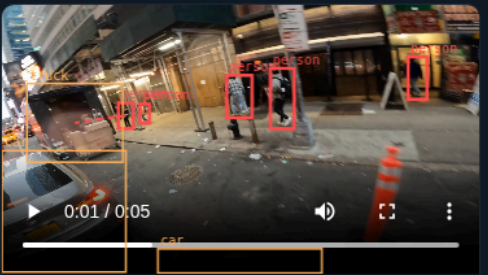
RISK 4 crosswalk_conflict pedestrian
✓ reviewed video-verified
nyc_bike_gopro-1 new_york 5-10s

Reviewer: Rider in the bike lane is squeezed against a black SUV, then pedestrians step into the bike lane directly ahead while another cyclist and a police car pass within arm's length.

Model: A pedestrian is crossing the street in front of the ego vehicle, requiring a hard brake to avoid a collision.

The scene unfolds on a busy city street with a marked bike lane on the left and multiple lanes of traffic. A black van is stopped at an intersection partially blocking the lane.

✓ ✕ □ select ↗



RISK 3 jaywalking pedestrian ✓ reviewed
video-verified
nyc_bike_gopro-1 new_york 15-20s

Reviewer: Camera rider squeezes past a white car, then rides onto the sidewalk under scaffolding past a woman and a child.

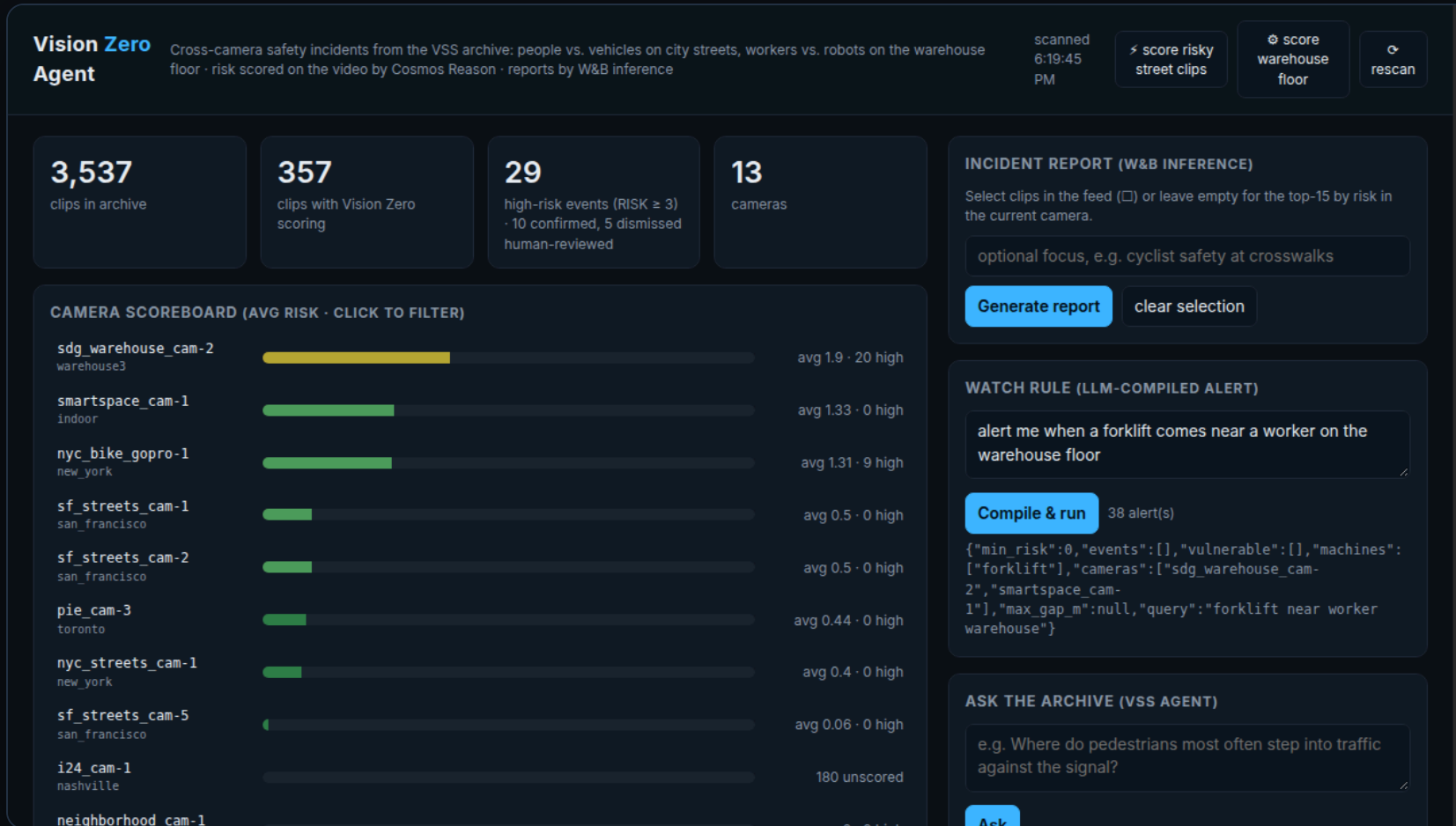
Model: A pedestrian is jaywalking on the sidewalk, creating a potential hazard for nearby vehicles.

The clip shows a vehicle moving along a city street with multiple lanes and a sidewalk. A white car is visible ahead, and an orange traffic cone is positioned on the road.

✓ ✕ □ select ↗

- Cyclist helmet camera, New York.
- **Red** people, **amber** vehicles; dashed line to the closest vehicle.
- RISK 4 crosswalk conflict, confirmed: rider squeezed against an SUV as pedestrians step into the bike lane.

Watch rules in plain English



- "Alert me when a forklift comes near a worker on the warehouse floor."
- gpt-oss-120b on W&B inference compiles it to a JSON filter: machine = forklift, warehouse cameras.
- Alerts list instantly, confirmed clips first.

One-click incident report

Vision Zero Agent

Cross-camera safety incidents from the VSS archive: people vs. vehicles on city streets, workers vs. robots on the warehouse floor · risk scored on the video by Cosmos Reason · reports by W&B inference

scanned 6:29:46 PM

score risky street clips

score warehouse floor

rescan

warehouses

smartspace_cam-1
indoor

avg 1.33 · 0 high

nyc_bike_gopro-1
new_york

avg 1.31 · 9 high

sf_streets_cam-1
san_francisco

avg 0.5 · 0 high

sf_streets_cam-2
san_francisco

avg 0.5 · 0 high

pie_cam-3
toronto

avg 0.44 · 0 high

nyc_streets_cam-1
new_york

avg 0.4 · 0 high

sf_streets_cam-5
san_francisco

avg 0.06 · 0 high

i24_cam-1
nashville

180 unscored

neighborhood_cam-1
neighborhood

avg 0 · 0 high

nyc_streets_cam-2
new_york

180 unscored

sf_streets_cam-3
san_francisco

37 unscored

sf_streets_cam-4
san_francisco

avg 0 · 0 high

near miss 160

crosswalk conflict 7

dooring 1

jaywalking 2

path conflict 9

2. Top Incidents (worst first)

Rank	Clip	What Happened	Who Was at Risk	Reviewer Status
1	[7] (warehouse3)	A worker walks directly into the path of a moving reach-truck forklift; the forklift swerves and passes < 1m from the worker.	Warehouse worker (foot)	Confirmed
2	[8] (warehouse3)	Police officer steps onto the mast of a moving blue AGV while it	Police officer (foot)	Confirmed

WATCH RULE (LLM-COMPILED ALERT)

e.g. alert me when a cyclist is within 1 meter of a moving vehicle on any NYC camera, or when an AGV comes near a worker in the warehouse.

Compile & run

- Executive summary, worst incidents, patterns across cameras, recommended actions with evidence.
- Reviewer notes override the model; unreviewed clips are labeled unverified.

Measured, not guessed: W&B Weave + evaluation

Check (human frame review = ground truth)	Result
Street clips: Cosmos risk vs. reviewer	8 / 10 agree
Warehouse clips (after the zero-humans consistency rule)	6 / 6 agree
Archival war film (5 films, 222 clips): explosions	85% precision · 91% recall
Live trigger, 3 unseen films (36 segments): explosions	3 / 3 blasts alerted · 0 false alarms
Archival war film: bomb release	10% precision

Every Cosmos Reason and LLM call is traced in Weave (project jayakumaronline/vision-zero-agent). Results are logged as the W&B run "cosmos-reason-frame-checked-eval". Reviewed street and warehouse clips are spot checks, not a random sample.

Built in one day

VAST

Video storage, semantic search, Q&A over the archive, YOLO detections, streaming.

NVIDIA Cosmos on CoreWeave GPUs

Cosmos Reason watches every clip and scores the risk.

Weights & Biases

Serverless inference for reports and watch rules; Weave tracing; evaluation runs.

Cursor

Built, deployed and tested with Cursor agents, subagents and skills.

Vision Zero Agent

Any camera, any archive. Every finding checked on the video, and every number measured.