UNTETHER AI

Accelerated AI Video Analysis Reference Design
with tsunAImi® Accelerator Cards

tsunAImi® Outperforms GPUs for Video Analysis

Using legacy hardware is holding back your smart city video analytics. A single tsunAImi Accelerator Card can turn an existing server into an AI powerhouse and works out of the box with this complete smart city video analytics reference design.

48	**3.75X**	**2X**
Real-Time 30 FPS Streams	**Greater Efficiency vs GPU**	**Greater Performance vs GPU**

Reference Design Components

Hardware Configuration
- 1x tsunAImi tsn800 accelerator
- CPU as host

Software Configuration
Configurable number of streaming video feeds into models capable of:
- Image Segmentation
- Object Detection
- Classification

Analytics include:
- Person counting
- Car counting
- Danger Zone detection
- Walk/Stop detection

Included AI Models:
- YOLOX-L
- YOLACT
- runAI YOLO

Results
tsunAImi tsn800 delivers:
- 3.75X greater efficiency on object detection
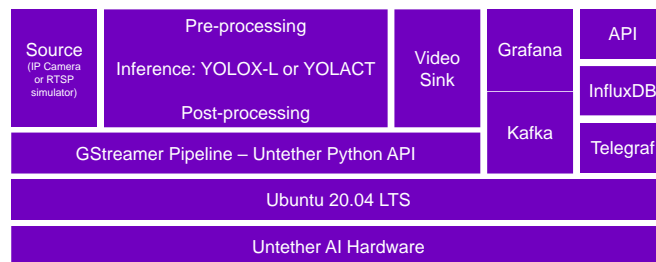- 2X greater performance on object detection

www.untether.ai
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A single tsunAImi® tsn800 can deliver high performance AI analytics
Use this reference design to start building a high-performance video analytics pipeline for smart city applications.
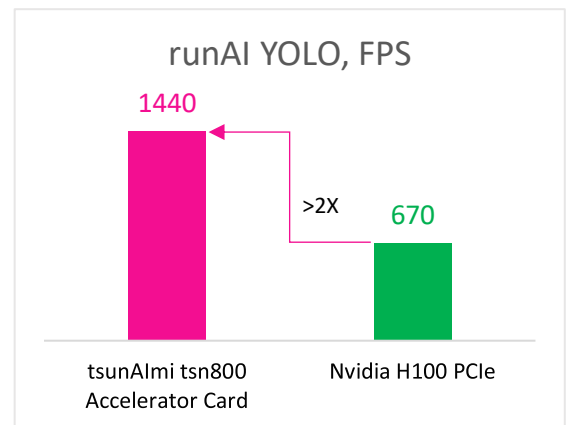
Smart City Solution Architecture

Source (IP Camera or RTSP simulator)	Pre-processing — Inference: YOLOX-L or YOLACT — Post-processing	Video Sink	Grafana / Kafka	API / InfluxDB / Telegraf
GStreamer Pipeline – Untether Python API		Kafka	
Ubuntu 20.04 LTS			
Untether AI Hardware			

SOURCE-CODE The entire software infrastructure for this reference design is available as source code which can be used as is or modified to meet your requirements.

SEAMLESS INTEGRATION The reference design includes an RTSP simulator and integrations with Kafka, GStreamer, Telegraf, Grafana, and InfluxDB to create real-time analytics dashboards based on the video streams.

BETTER PERFORMANCE The tsunAImi tsn800 delivers twice the throughput for real-time inference compared to the leading GPU.

runAI YOLO, FPS

tsunAImi tsn800 Accelerator Card	Nvidia H100 PCIe
1440	670

>2X

640 x 640 x 3 inputs. Batch = 1.

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