



Goru[®]

AI Assisted Vision Based Asset Tracking and Spatial Awareness System

M.Sc. Seref Burak Selvi

burak.selvi@selvitechnology.com

Team



Burak Selvi

Technical Lead

PhD candidate in AI assisted autonomy

MS, BS in Electrical and Electronics Engineering

REU Program Participant of Harvard University



Enes Yaman

AI R&D Engineer

BS in AI Engineering



Satuk Cevik

Robotics R&D Engineer

BS in Mechanical Engineer

Industrial workspaces lack effective real-time solutions for **asset tracking and spatial awareness**, leading to inefficiencies.

An **AI-powered vision system** integrated into workspace assets that provides real-time asset tracking and dynamic mapping can enhance efficiency in industrial workspaces.

To be scalable and effectively deployed across the entire workspace, the system must remain **low-cost, lightweight, and computationally efficient**.

Goru® - Approach



- **Real time ego localization** of the integrated asset is done using visual inertial odometry
- **Object/asset/event detection** using AI
- **Real time location estimation** of detected object/asset/event
- **Real time map generation** of objects/assets/events
- Works at **GNSS denied** environments

Goru® - Approach



Assets Goru can be integrated into:

- Human (wearable as vest),
- Forklifts
- Heavy machinery,
- Mining vehicles,
- Unmanned systems,
- Poles,
- EV charging stations,
- Other (please contact for your specific asset types)

Eurogia workspaces where Goru can be deployed:

- Power plants
- Biomass facilities
- Carbon Capture & Storage sites
- Oil & gas exploration and production sites
- Mining sites (underground and surface)
- Refineries and chemical plants
- Cement and metallurgical industries
- Manufacturing facilities and industrial processes
- Green and zero-emission buildings
- District heating and cooling networks (urban energy systems)
- Logistics centers and warehouses
- Ports, airports, and transport hubs
- Waterways and rivers

Asset Localization and Tracking in Industrial Workshops (Spatial Awareness)

Problem: Tools, trolleys, and other mobile equipment are frequently misplaced or hard to locate in busy workshop environments, causing time loss and reduced productivity.

Solution with Goru®:

- Continuous tracking of assets such as trolleys, specialized tools, and mobile units within the workshop.
- Visualization of their real-time positions on the system's digital map.
- Quick search functionality for locating needed assets.

Impact: Increased efficiency, reduced delays, and optimized resource usage in daily operations.

Goru® - Use Case 1

Asset Localization and Tracking in Industrial Workshops (Spatial Awareness)

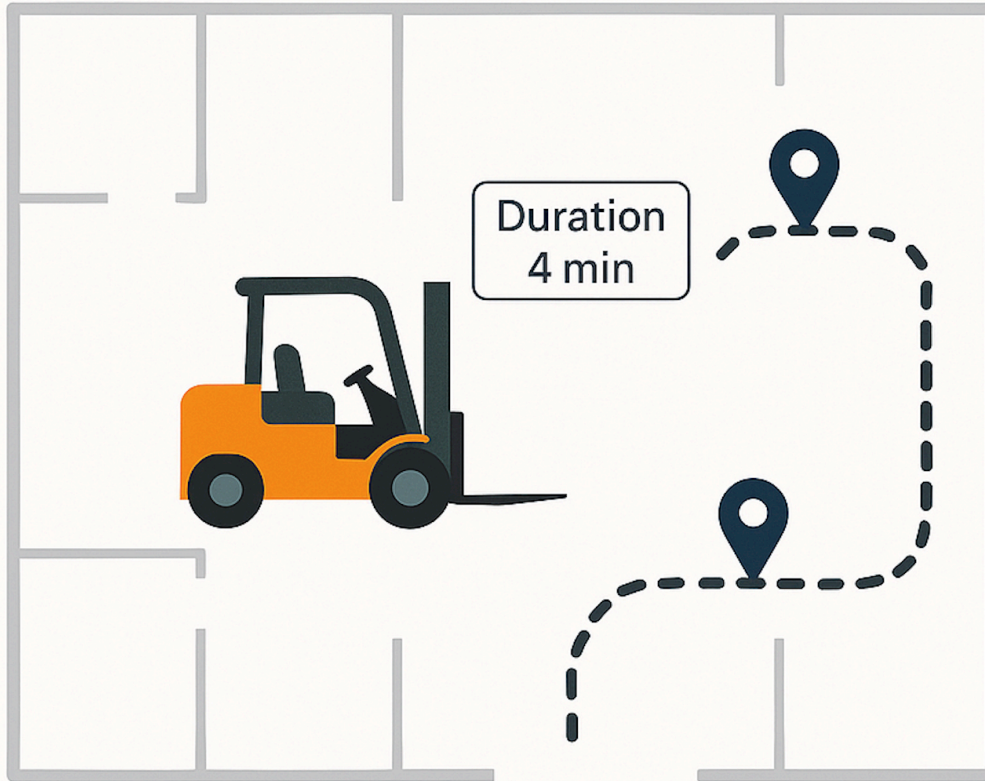


Event: Emergency exit is not clear

Real Time Map

Goru® - Use Case 1

Asset Localization and Tracking in Industrial Workshops (Spatial Awareness)



Work duration estimation

Workspace Layout Optimization through Real-Time Mapping

Problem: In facilities, workshops, and factories, workspace layouts are often designed without continuous feedback from actual usage patterns, leading to congested areas, inefficient routes, and underutilized zones.

Solution with Goru®:

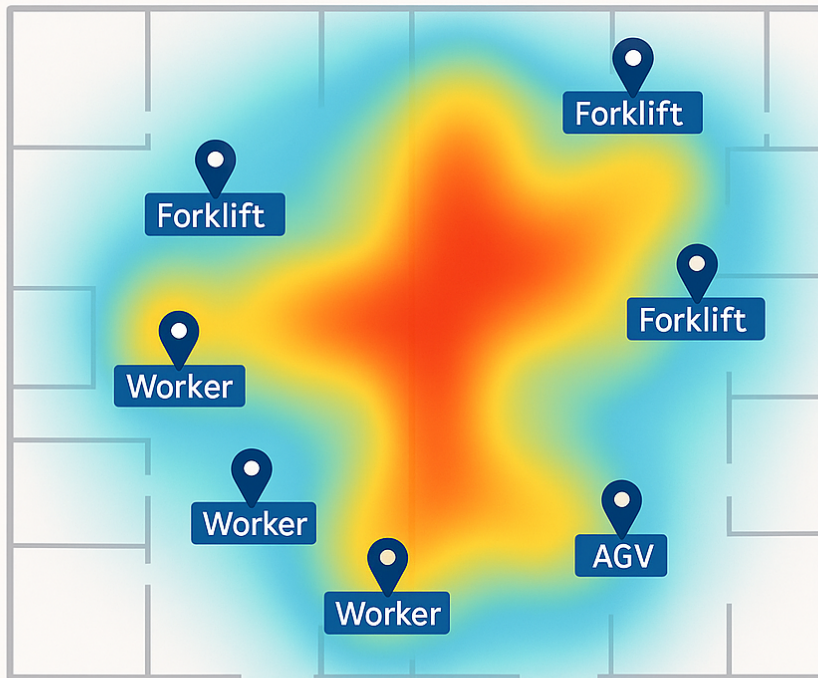
- **Real-time mapping** of worker and asset **movements** across the workspace.
- Generation of **heatmaps** to identify areas of high and low activity.
- Collection of data that enables **route optimization** for workers and equipment.
- Insights for **rearranging storage areas, pathways, and workstations** to maximize safety and efficiency.

Impact: Improved workflow efficiency, reduced congestion and accident risk, and data-driven decisions for future workspace design and layout adjustments.

Goru® - Use Case 2

Workspace Layout Optimization through Real-Time Mapping

Workspace Layout Optimization through Real-Time Mapping



Goru[®] - Unique Features

It offers **not only** a localization and mapping solution **but also** semantic inference like a patrol service.

It is integrable for **not only** static assets **but also** dynamic assets.

In battery mode, life span is 8 hours. So, it works throughout one shift.

It is low-cost, lightweight, and computationally efficient in order to ensure scalability and wide deployment across the entire workspace.

It works not only in workspaces but also in closed environments such as **tunnels, caves** and **mines**.

Goru[®] - Sought-After Partner

Looking for a Partner:

- The ideal partner should operate in Eurogia application domains such as manufacturing facilities, industrial processes, refineries, mining sites, energy generation plants, or carbon capture and storage facilities, with a strong interest in real-time asset tracking, dynamic mapping, and AI-powered spatial awareness solutions.
- Previous experience in "Industry 4.0 or smart warehouse solutions" will be highly valued.
- The partner will actively contribute to defining use cases, providing facility access for piloting, and shaping validation.

Goru[®] - Customization

Customization topics are:

- simulation of a digital twin of the facility,
- collection and labeling of training datasets,
- AI model training,
- integration of Goru[®] to infrastructure,
- UI/UX development of real time map
- and in-facility testing leading up to deployment.

We will collaborate closely with our partner across all work packages, ensuring the joint development of a practical and scalable solution.

Questions?

Selvi Technology

“Goru®: AI Asisted Vision Based Asset Tracking and Spatial Awareness System”

Contact Info:

Email: burak.selvi@selvitechnology.com

Social media: [@selvitechnology](#)