

## Automatic Person Detection System Based on Image Analysis

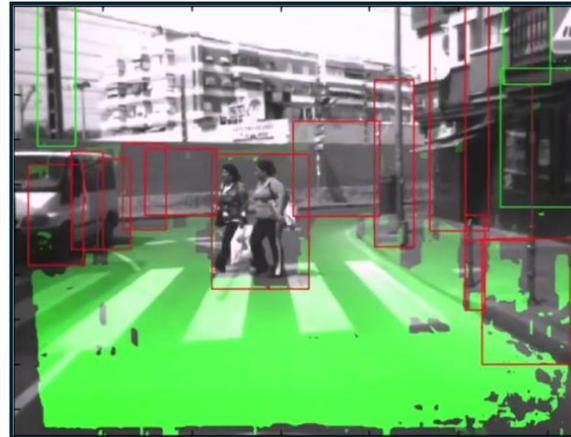
### Summary/Characteristics

The Intelligent Systems Laboratory group at Universidad Carlos III de Madrid has developed a system that automatically detects the presence of people in images captured by cameras.

Detection is independent of clothing, activity, movement, or appearance of the people in the images, as well as the presence of other objects. Algorithms have been developed for both visible-spectrum cameras and long-wave infrared cameras. The system has a wide range of applications in both indoor and outdoor environments.



Long-Wave Infrared Person Detection



Visible-Spectrum Person Detection

### Innovative Aspects

- Automatic, unsupervised detection of people in images.
- Capable of operating in indoor and outdoor environments, adaptable to multiple scenarios.
- Functional under any lighting conditions.
- Compatible with visible and long-wave infrared spectrum, utilizing both light and body-emitted heat.
- Temporal trajectory tracking, allowing reconstruction of movements in video sequences.

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### Competitive Advantages

- Reduced operational costs by eliminating the need for constant human operator intervention.
- Higher detection accuracy and reliability, even under adverse lighting, weather, or obstacle conditions.
- Enhanced real-time safety through fast and precise detection of intrusions or pedestrians.
- Dual functionality in visible and infrared spectrum, expanding applications compared to solutions relying on a single sensor type.

#### Technology readiness level:

Ready for demonstration-Tested in relevant environments. TRL 7.

#### Intellectual and Industrial Property Status:

Industrial secret– *know how*

#### Type of collaboration sought:

Funding is sought from companies interested in or working with the final system, operating in areas such as security and video surveillance.