SYSTEM AND METHOD FOR NOISE-ENABLED STATIC IMAGING USING EVENT CAMERAS

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PATENT STATUS

Country	Type	Number	Dated	Case
Patent Cooperation Treaty	Published Application	WO 2025/024853	04/10/2025	2024-009

BRIEF DESCRIPTION

Dynamic Vision Sensors (DVS), also known as event cameras or neuromorphic sensors, enable extremely high temporal resolution and dynamic range compared to traditional sensors. However, DVS pixels only capture changes in intensity, which discards all static information. To overcome this issue, an additional photosensor array is needed either (1) in a two-sensor system or (2) combined into a single sensor with two-pixel technologies (DAVIS346). In both cases, the resulting system is bulkier, more complex to design, and more expensive to manufacture.

UC Berkeley researchers have developed an event-based imaging system that can capture static intensity, thereby eliminating the need of such two-pixel technologies by extracting underlying static intensity information directly from DVS pixels. The researchers have also demonstrated the feasibility of this approach through the analysis of noise statistics in event cameras.

SUGGESTED USES

- Industrial Automation: The ability to capture static scene information can provide important context about the environment, which can help in tasks such as object detection, tracking, and manipulation.
- IoT & Monitoring: The invention can be used in IoT devices for real-time monitoring of environments. The high temporal resolution can capture fast changes in the scene, while the static scene information can provide context about the environment.
- Automotive & Mobility: The invention can be used in advanced driver-assistance systems (ADAS) and autonomous vehicles to provide real-time information about the environment.
- Medicine: The invention can be used in surgical robots to provide high-resolution, real-time imaging.
- Security cameras

ADVANTAGES

- reduces the cost, footprint, and data bandwidth of the imaging system.

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Compressive Plenoptic Imaging
- Hyperspectral Microscopy Using A Phase Mask And Spectral Filter Array

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INVENTORS

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OTHER INFORMATION

CATEGORIZED AS

- **Imaging**
  - Medical
  - Other
  - Security

RELATED CASES

2024-009-0

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