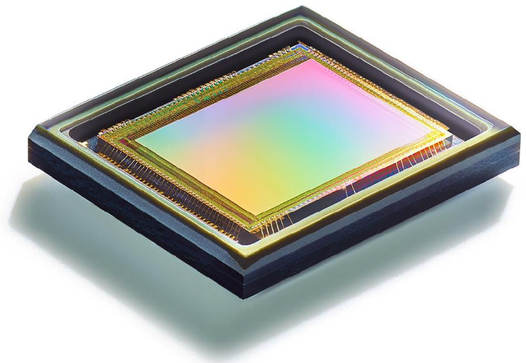

PROPHESEE
METAVISION FOR MACHINES

NEUROMORPHIC VISION

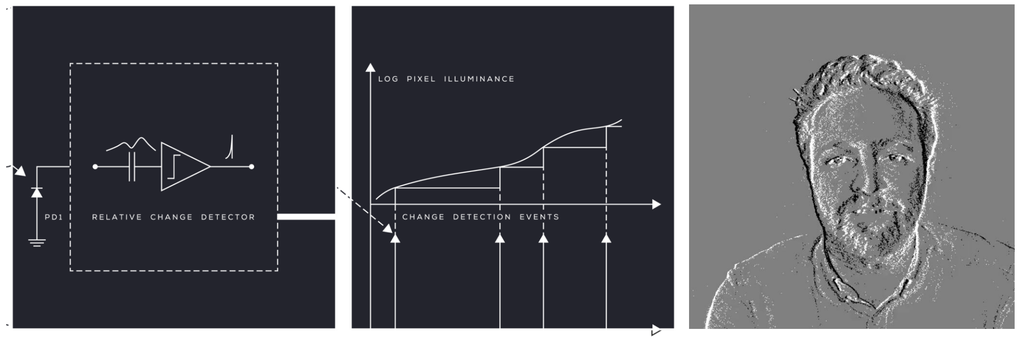


+

AI

Each pixel in Metavision® sensor embeds an intelligence logic core, enabling it to **act as a neuron.**
Each pixel activates itself **intelligently and asynchronously** depending on the amount of photons it senses.
A pixel activating itself is called **an event.**

Events are driven by the scene's dynamics, not an arbitrary clock.
The Metavision® sensor **does not have a frame rate.**



This unlocks extreme time resolution of **1µs**
Frees from the need for **exposure times**
Allows for **124dB HDR** and **40 millilux** low-light cutoff
Generates **10 to 1000x less data**

Metavision® sensor when used in combination with a **VCSEL projector** results in a novel **Structured Light 3D** sensor
Other applications are IA/robotics, mobile/wearable, automotive

NEXT-GEN NEUROMORPHIC SENSING

HIGH-PRECISION DEPTH SENSING

NEUROMORPHIC 3D SENSING

Using events instead of traditional frames, Prophesee structured light can deliver high-precision depth map **50x faster** than state of the art structured light, free from blur & noise and in any light conditions.

GLANCE ID

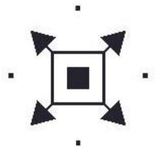
SMOOTHEST AND MOST SECURE UNLOCKS

Experience the fastest, most reliable face unlocks, in every condition. It not only relies on static images but also **uses microsecond event-pixels to detect your unique micro-motions - like humans do** - for next-level biometric security.

VIRTUAL CHATROOM

YOUR VIRTUAL SELF

Create your own realistic personal avatar to project your virtual-self into a meeting or live event.



3D AWARENESS

MAP YOUR SURROUNDINGS

Using state of the art Event-Based SLAM algorithms combined with depth sensing, create highly accurate maps and localize yourself in it, simply by moving around.

TOUCHLESS GESTURE CONTROL

AIR CONTROL

Instant hand gesture recognition for ultra smooth touch-free navigation.

EVENT-BASED STRUCTURED LIGHT

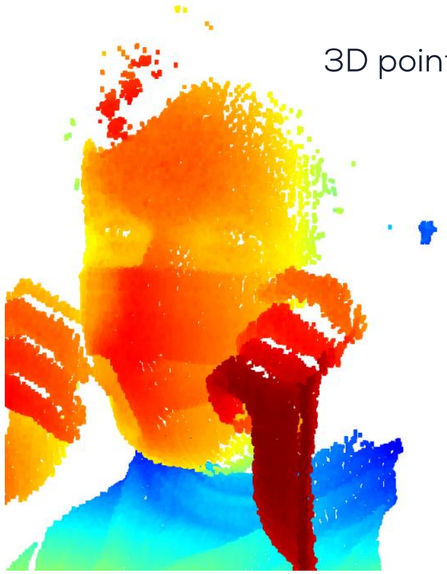
HIGH PRECISION DEPTH SENSING

Event-based structured light

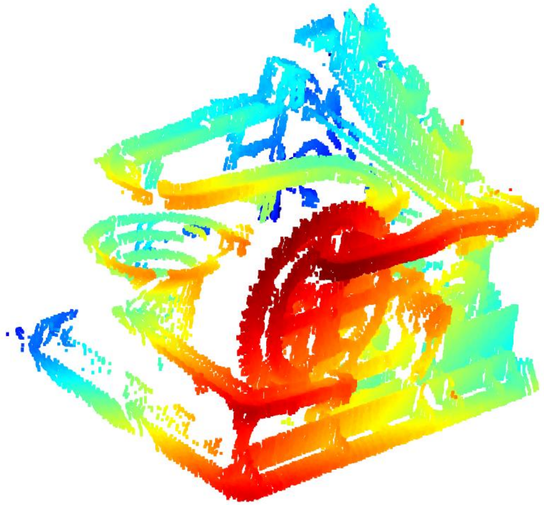
Today's state of the art depth-sensing techniques impose a **trade-off between exposure time, accuracy and robustness.**

By coupling an IR projector with Metavision® sensor, the **fast response time of each independent pixel allows for temporal pattern identification and extraction directly inside the sensor**. This allows for:

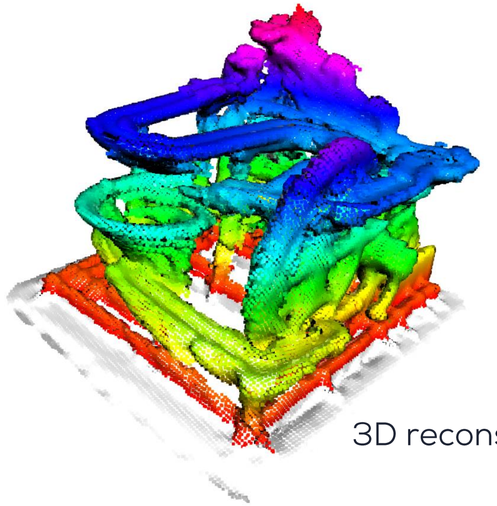
- **State of the art accuracy**
- **Up to 50x faster scanning times** (<1ms vs. 10-33ms in average with frame-based approaches)
- **Software complexity reduction** (matching is not done on frames after the fact but pixel by pixel, at the sensor level)
- **No motion blur** (no more tradeoff between frame rate and scanning time)
- **Outdoor-proof usage** (ultra-fast pulse detection enables power increase while keeping eye-safe rating)



3D point cloud of a face



3D point cloud of a marble circuit



3D reconstruction using kinect fusion

WE ARE LOOKING FOR

VCSEL projector makers that are:

- High power
- Short pulses
- Wavelength 940 nm


PROPHESEE
METAVISION FOR MACHINES