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CED: Color Event Camera Dataset

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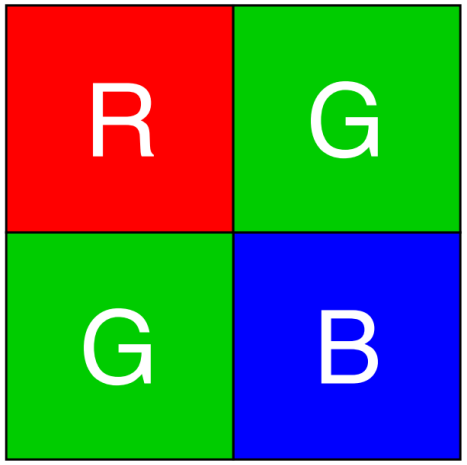
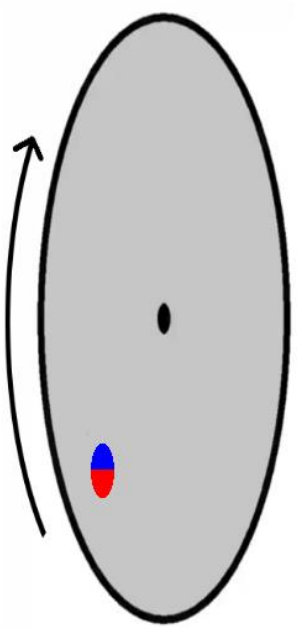
Color event camera[1]

- Each pixel is sensitive to **red, green or blue** light.
- Transmits **brightness changes** in each color channel

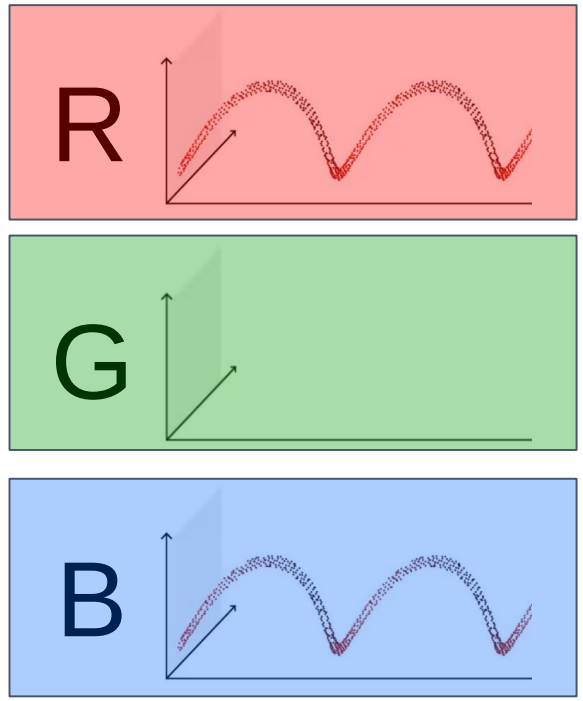
DAVIS346 Red Color



Bayer pattern



Input



Output

[1] Taverni et al., Front and back illuminated Dynamic and Active Pixel Vision Sensors comparison, TCS'18

CED: Color Event Camera Dataset

- 50 minutes footage of DAVIS **frames** and **color events**.
- Wide variety of scenes (incl. driving)
- Wide variety of lighting: from low light (0.8 lux) to direct sunlight (10,000 lux)
- High dynamic range scenes
- High speed, 6-DOF motions

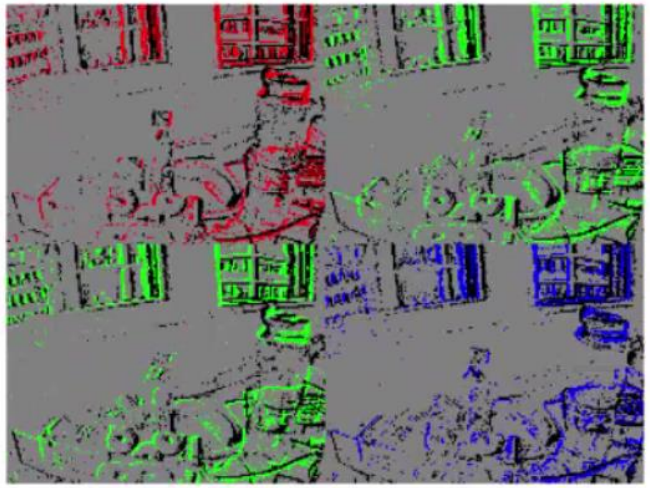
Scheerlinck et al., CED: Color Event Camera Dataset, CVPR-W'19

Sample sequences from the dataset

DAVIS frame Color events DAVIS frame Color events

How to visualize the color event stream?

- We adapted multiple (grayscale) reconstruction methods to color event data.



Color events

Manifold Regularization [1]

High-pass Filter [2]

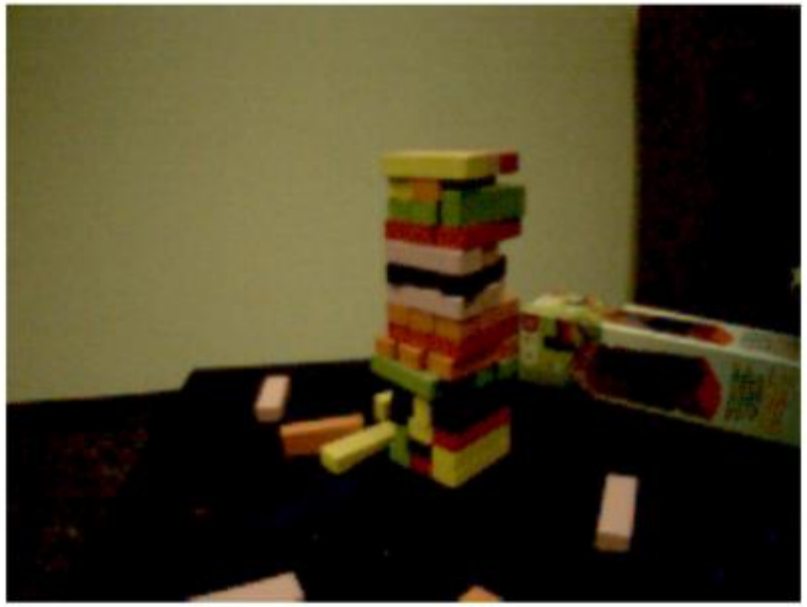
Neural Network [3]

[1] Munda et al., IJCV'18

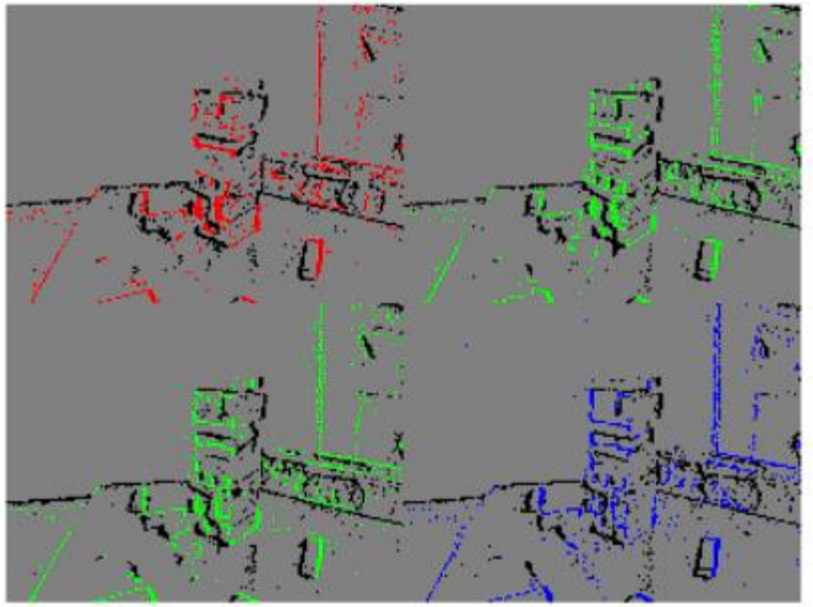
[2] Scheerlinck et al., ACCV'18

[3] Rebecq et al., CVPR'19

High-speed sequence

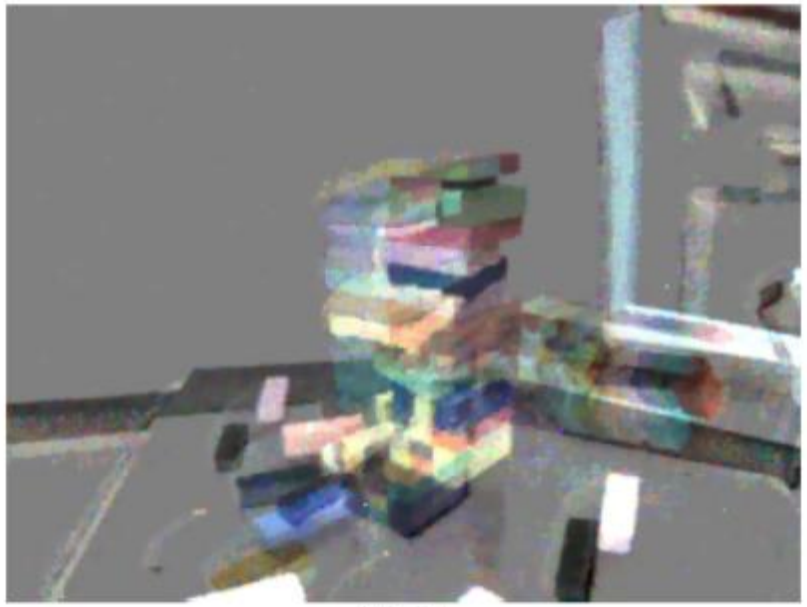


DAVIS frame



Color events

MR



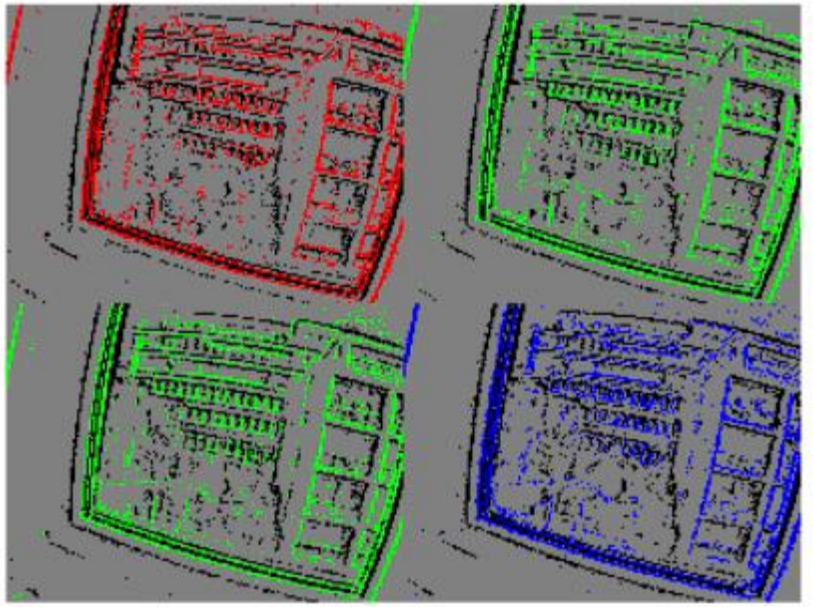
HF

E2VID

HDR

sequence

DAVIS frame



Color events

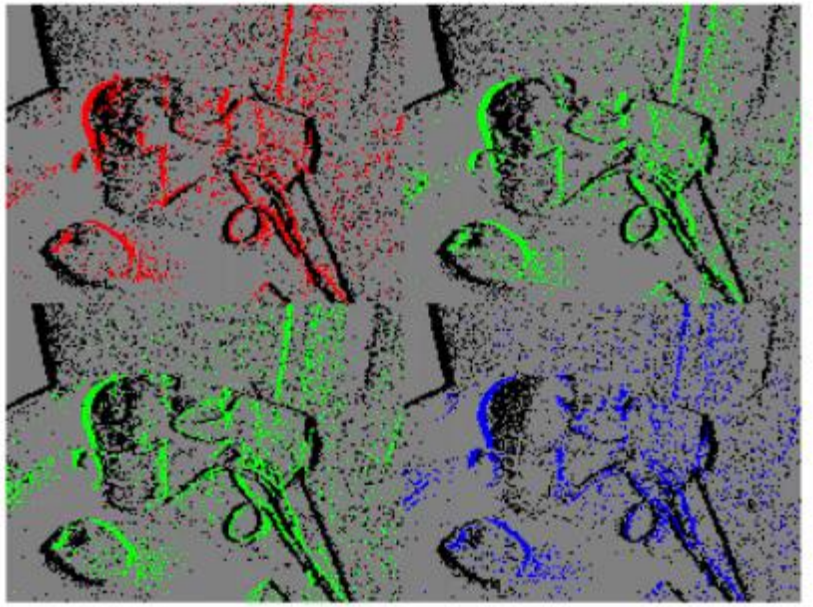
MR

HF

E2VID

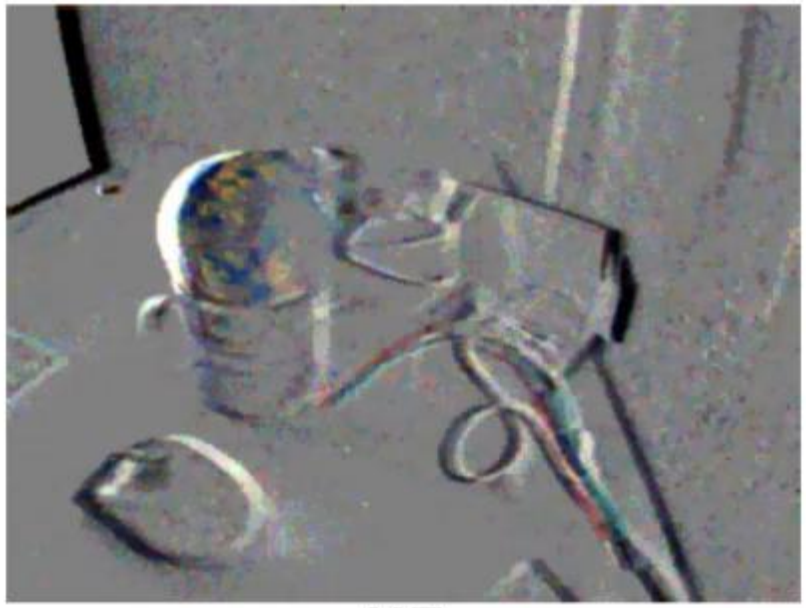
Low light sequence

DAVIS frame

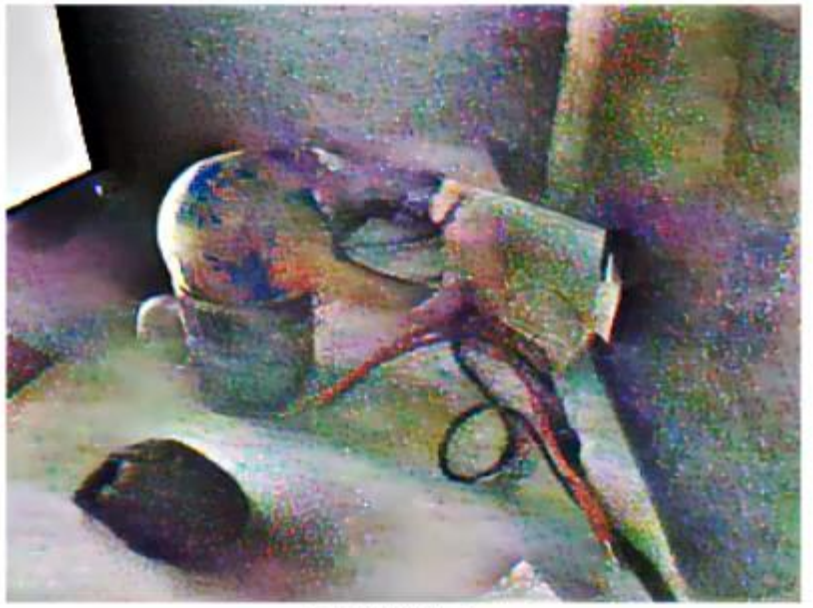


Color events

MR



HF



E2VID

Download the dataset at:

http://rpg.ifi.uzh.ch/CED