

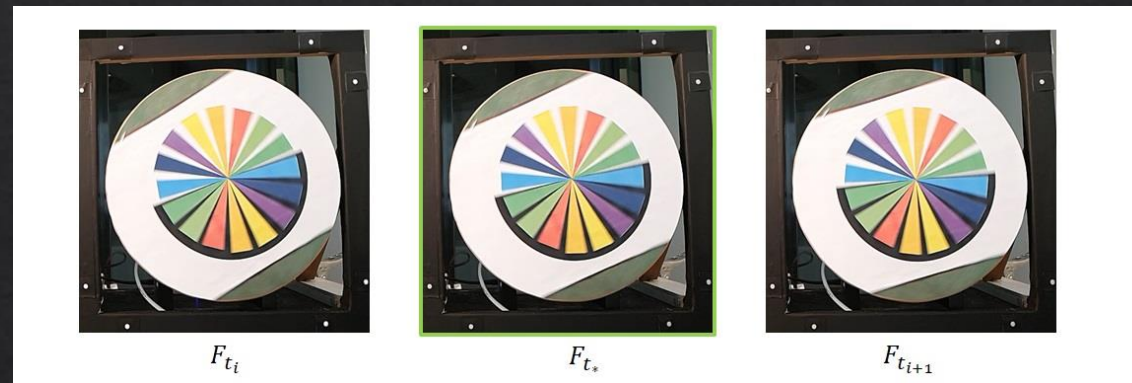
# EFI-Net: Video Frame Interpolation from Fusion of Events and Frames

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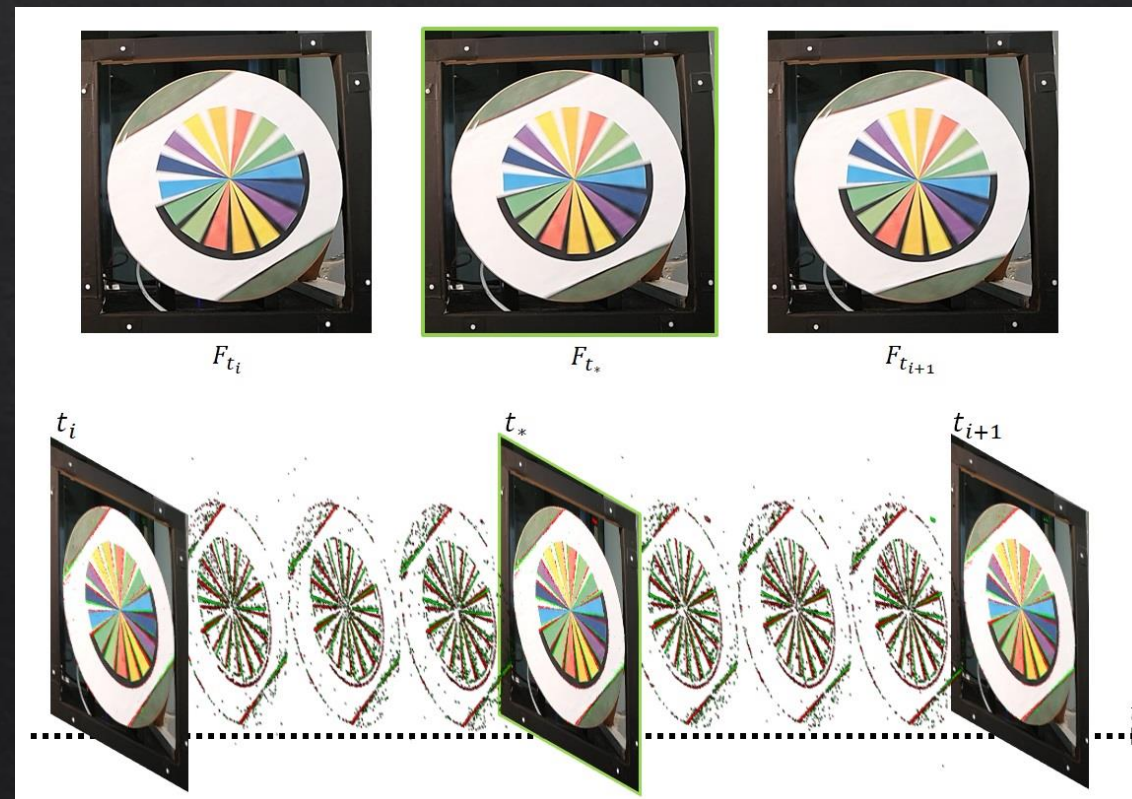
# Video Frame Interpolation

- ◆ Synthesizes non-existent frames by interpolating over a set of sequential frames



# Video Frame Interpolation with Events

◇ Goal: Utilize events for precise temporal frame synthesis





# Video Frame Interpolation with Events

## ◇ Motivation

- ◇ EFI-Net uses events with half spatial resolution in each dimension



*SSM*



*DAIN*

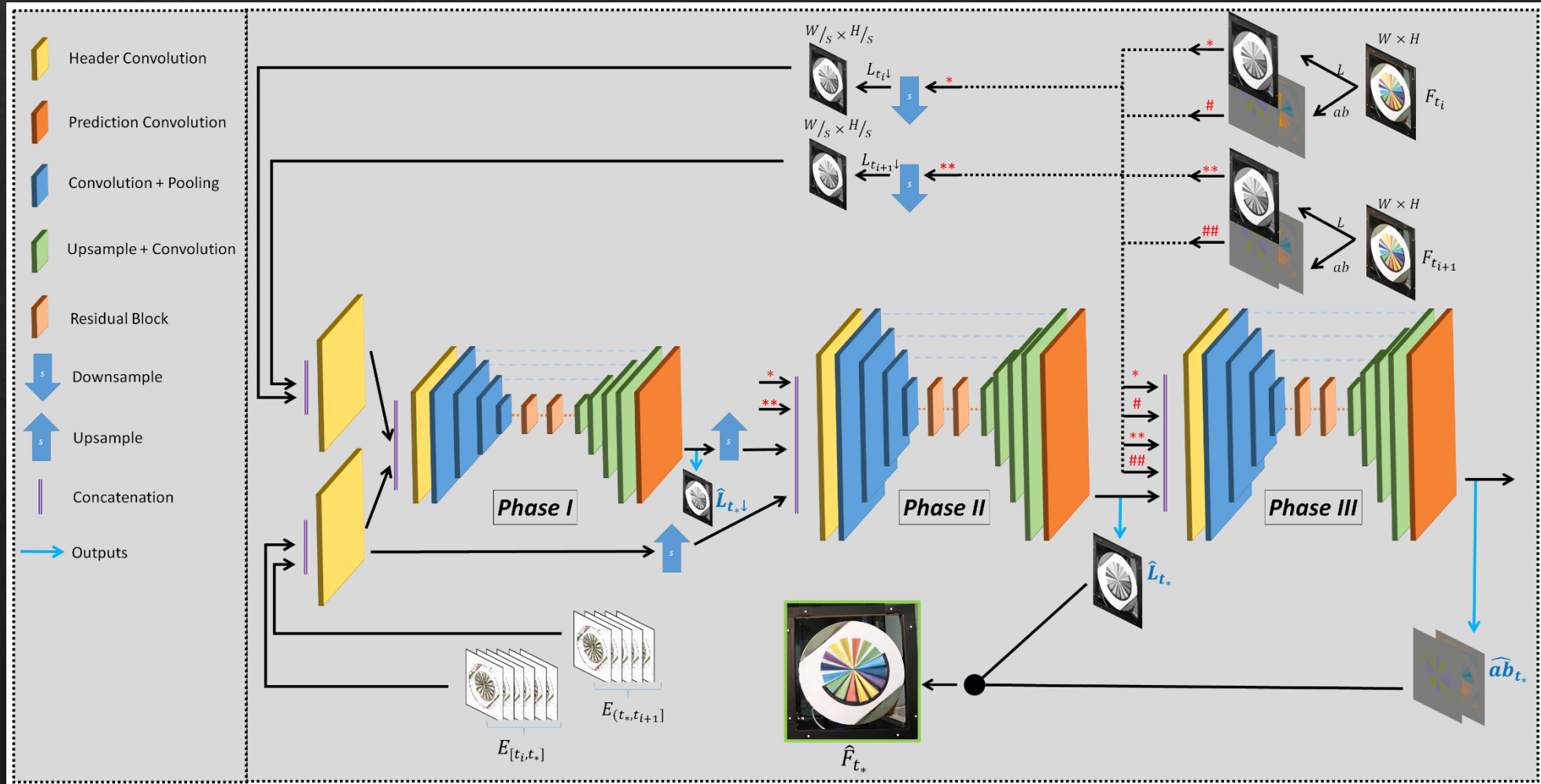


*EFI – Net*

# EFI-Net Architecture

- ◆ Full CNN solution which is performed in three phases:
  - ◆ Phase I:  
fuses the data from the intensity images and the event stream
  - ◆ Phase II:  
up-scales the output to the spatial resolution of the conventional camera
  - ◆ Phase III:  
colorizes the intensity image to output a final color frame

# EFI-Net Architecture

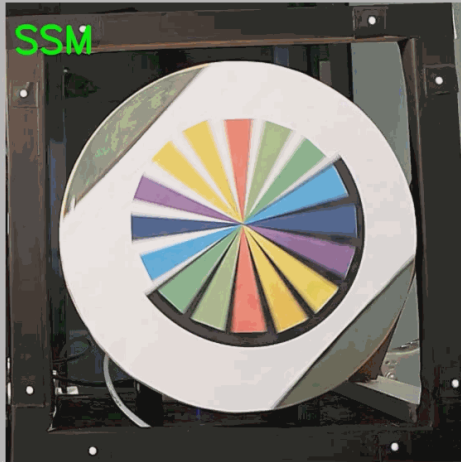




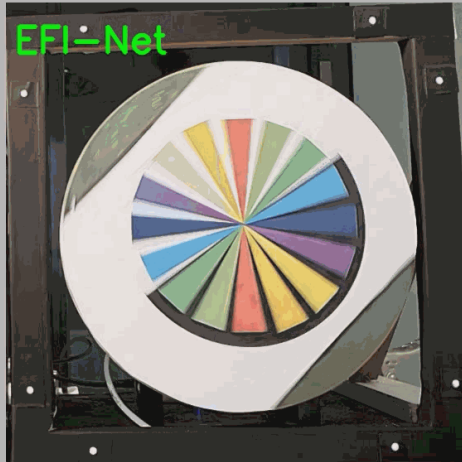
# Results

Star 150 RPM 60to240

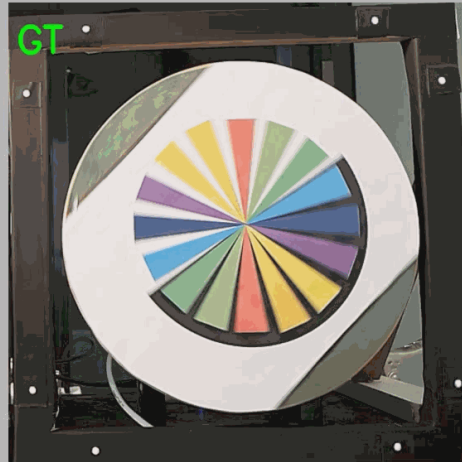
SSM



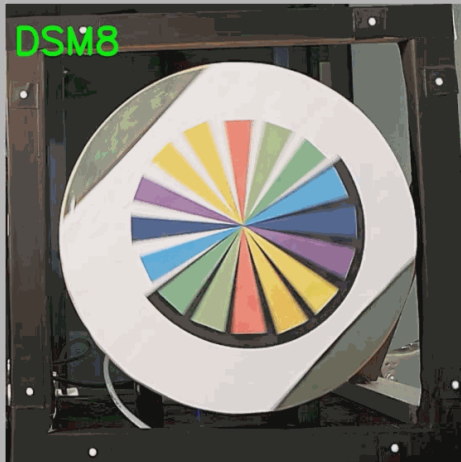
EFI-Net



GT



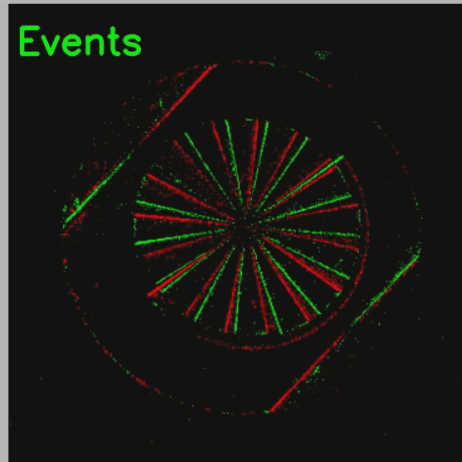
DSM8



DAIN



Events



# Results

## ◆ UZH data-set

	Ours	SSM	DAIN
PSNR	27.56 [db]	22.30 [db]	22.23 [db]

## ◆ Our data-set

	Ours		SSM		DAIN	
fps	60to240	30to120	60to240	30to120	60to240	30to120
PSNR	28.23 [db]	26.46 [db]	27.23 [db]	21.92 [db]	27.04 [db]	21.84 [db]



Thank You!

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