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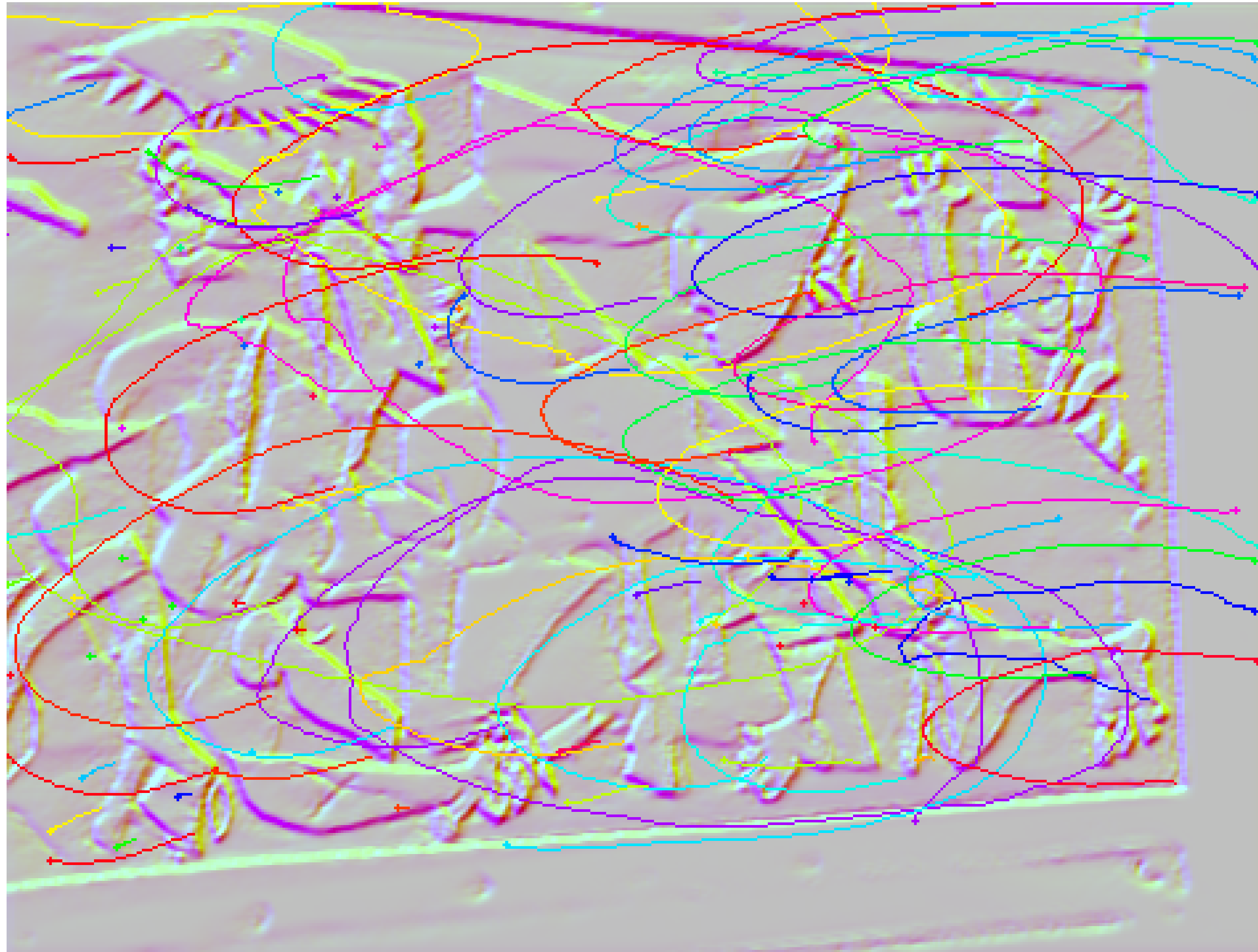
Detecting Stable Keypoints from Events through Image Gradient Prediction

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Quantitative results



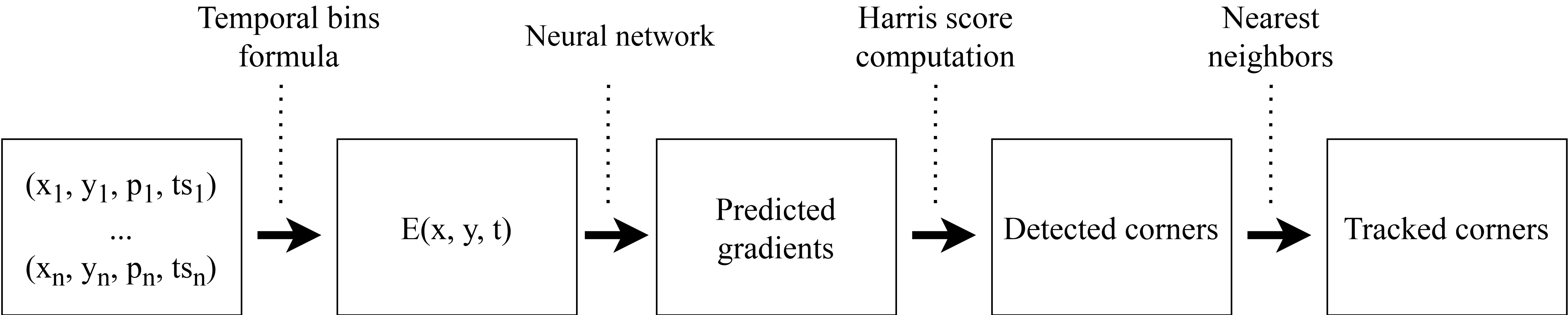
Why keypoints ?

- Reducing the amount of data to analyze
- Selecting and focusing on the events richest in information
- Enabling downstream tasks such as SLAM and SfM

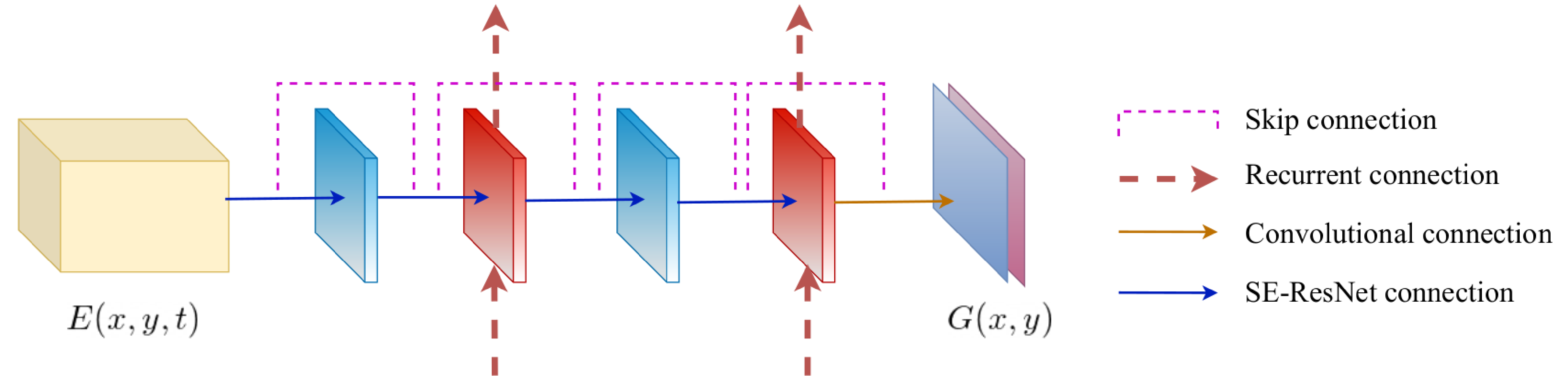
Why gradients ?

- Predicting gradients from events is easier than predicting images
- Reduces steps in post processing
- Reduces memory needs of the network
- Tunable Harris parameter without retraining

Objective of our method

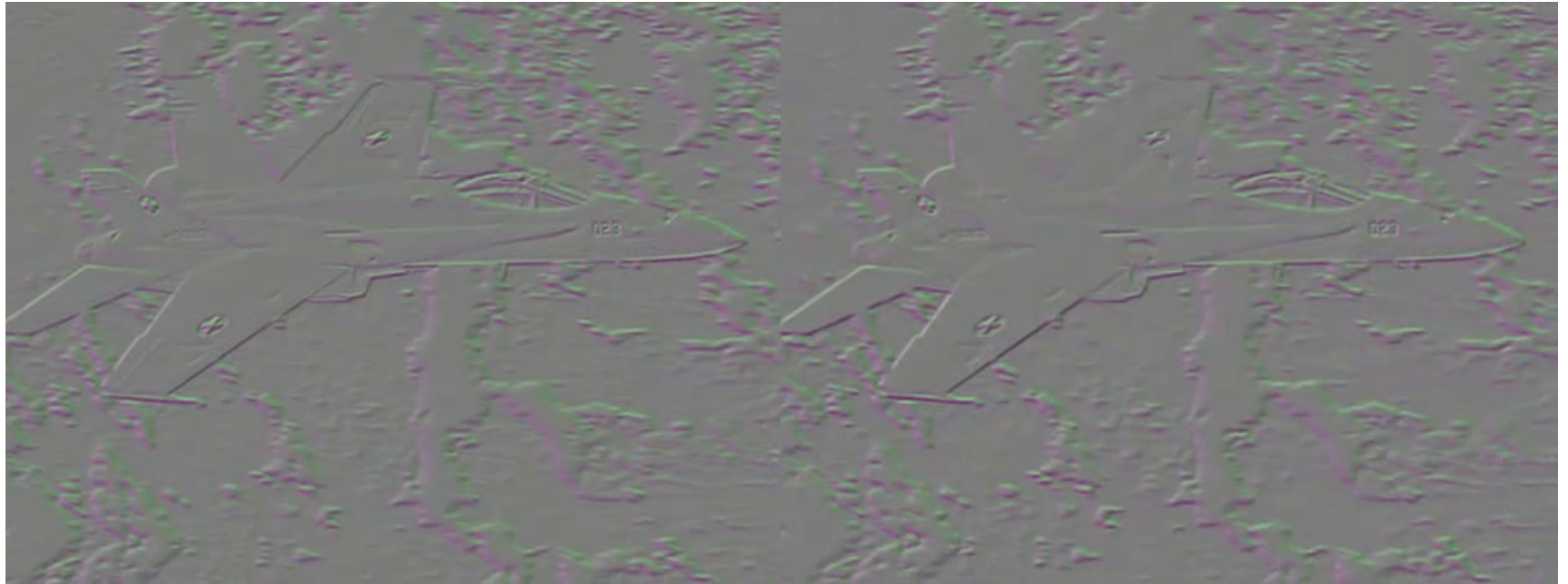


Network



Gradients

GT vs prediction

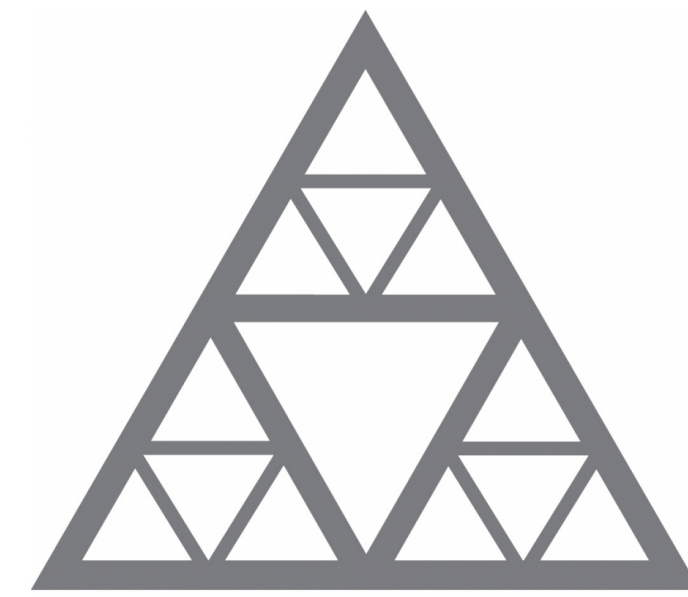


Quantitative results

Table 1. Evaluation on the ATIS Corner Dataset [20] for $\Delta t = 25ms$. Our method has 5 times longer tracks, while maintaining similar reprojection error as the state-of-the-art.

	evHarris [38]	evFast [21]	Arc [1]	<i>SILC</i> * [20]	Ours
Reprj. error (pix)	2.57	2.12	3.8	2.45	2.56
Track length (sec)	0.74	0.69	0.91	1.12	5.46

Results measured on the ATIS corner dataset from Manderscheid et al.



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Thank you for your attention

Feel free to send any question at: pchiberre@prophesee.ai