LiDAR-Event Stereo Fusion with Hallucinations

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Introduction

Problems

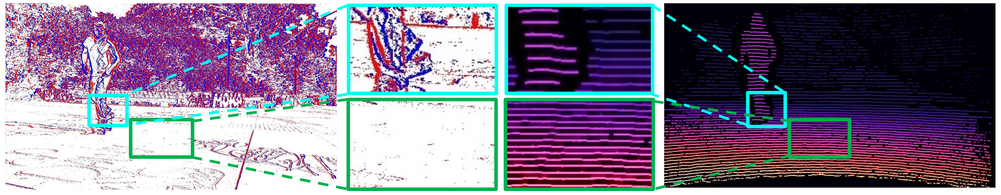
- Event stereo networks suffer in the absence of camera motion or brightness changes **(a)**
- LiDAR fusion can soften the problem, yet solutions from the RGB literature show limited impact **(b)**

Proposal

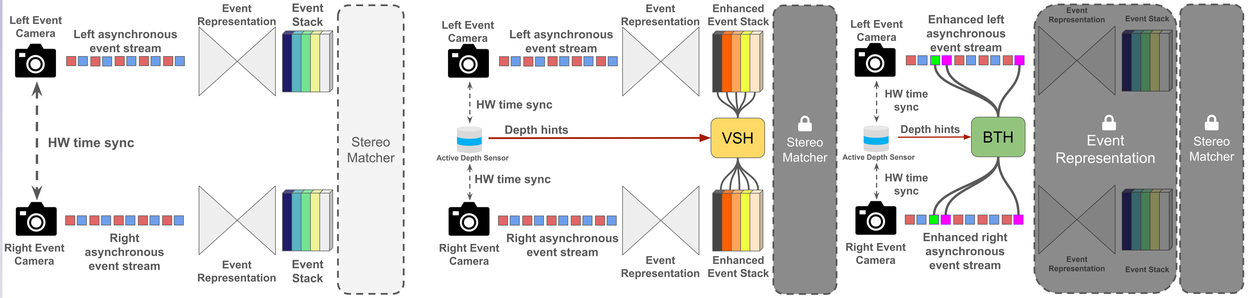
- We hallucinate **virtual events** on according to the sparse measurements from a depth sensor
- We can perform this either on stacked representations **(c)** or the raw stereo event streams **(d)**

LiDAR-Event Stereo Fusion

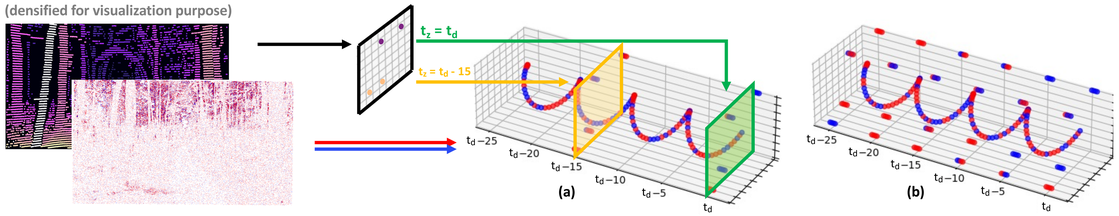
Event cameras and LiDARs – strengths and weaknesses



Hallucination Strategies: Virtual Stack (VSH) vs Back-in-Time (BTH)

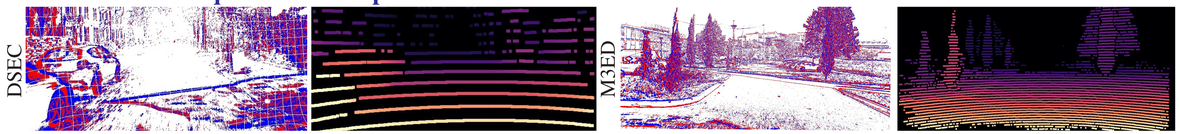


Overview of BTH strategy

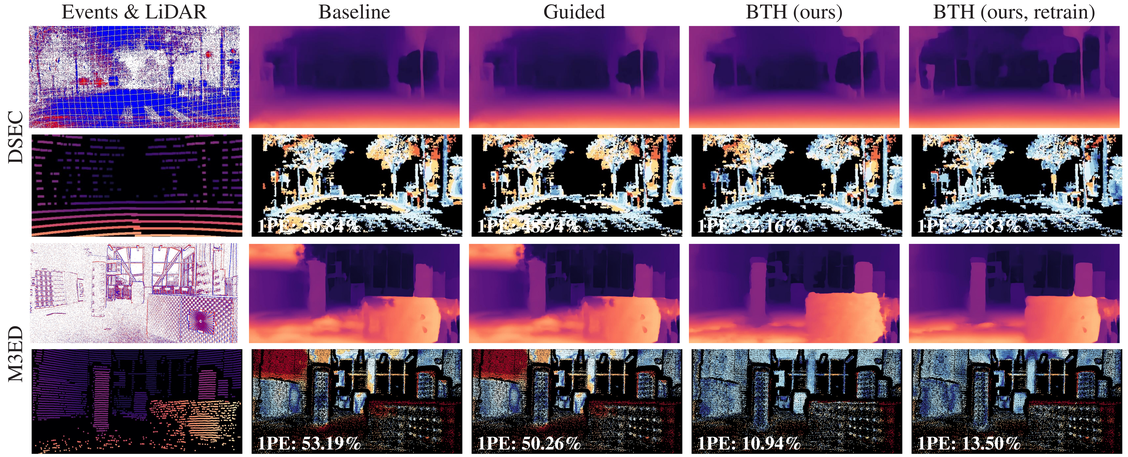


Experimental Results

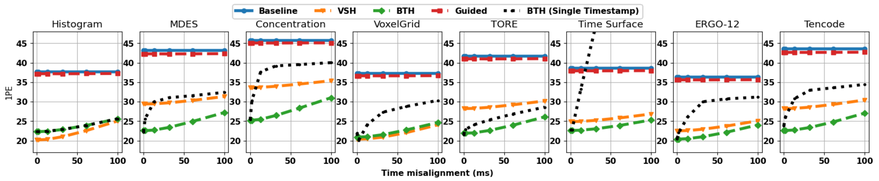
Evaluation datasets – qualitative comparison



Comparison with existing approaches from RGB literature



Robustness against time-misaligned LiDAR



References

Paper

Demo

Code