Active Stereo without Pattern Projector

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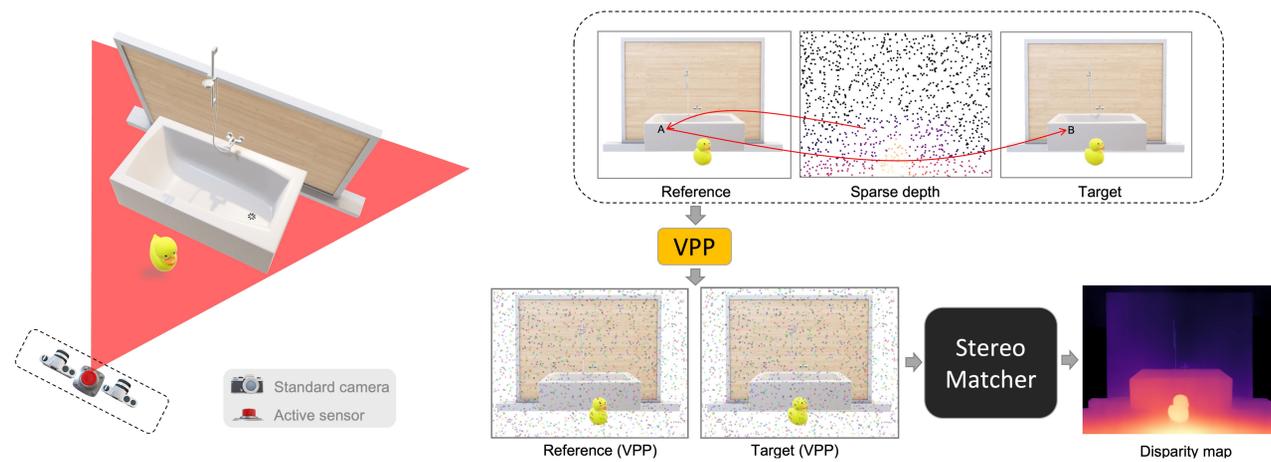**Project Page**

Introduction

Problems

- Stereo networks suffer in the presence of large un-textured regions and facing domain shifts
- Active stereo uses pattern projection, which is not always feasible (e.g., outdoor, long-range)
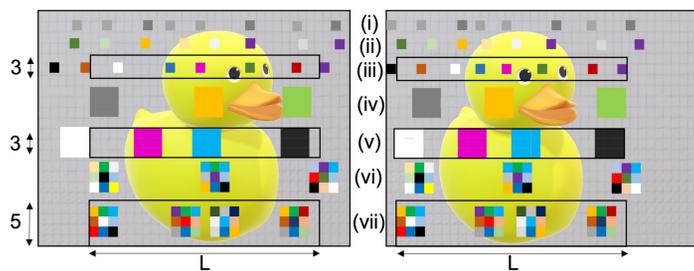
Proposal

- We project a **virtual pattern** on images according to the sparse measurements from a depth sensor
- This virtual active stereo setup works in any environment if coupled with an appropriate depth sensor
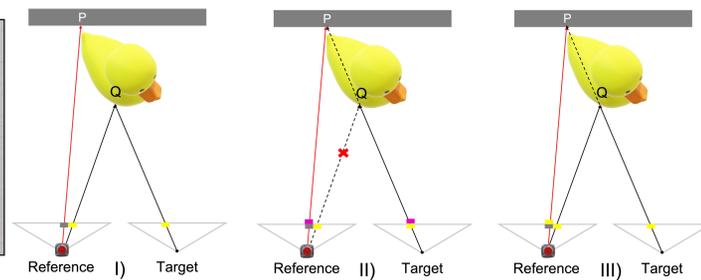
Virtual Pattern Projection (VPP) principle

Virtual Patterns
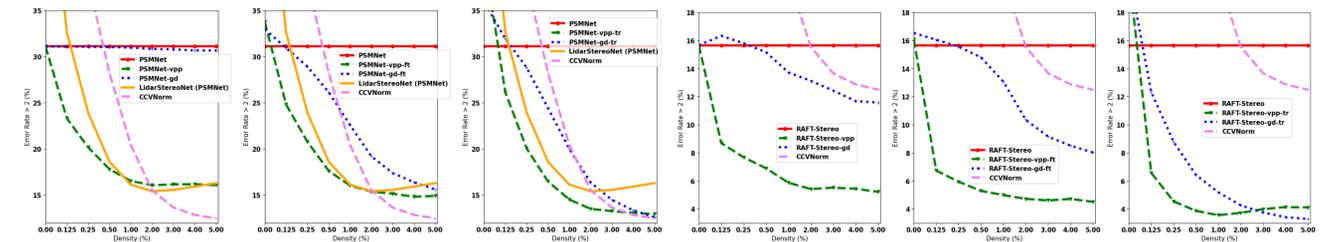

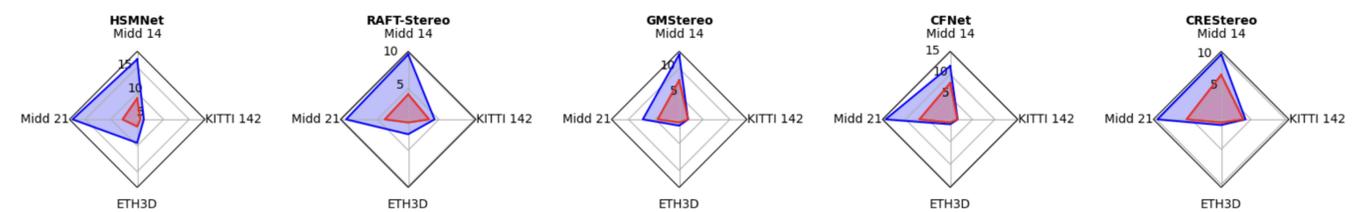### Handling Occlusions

VPP in action

Experimental Results

Comparison with existing guided-stereo approaches
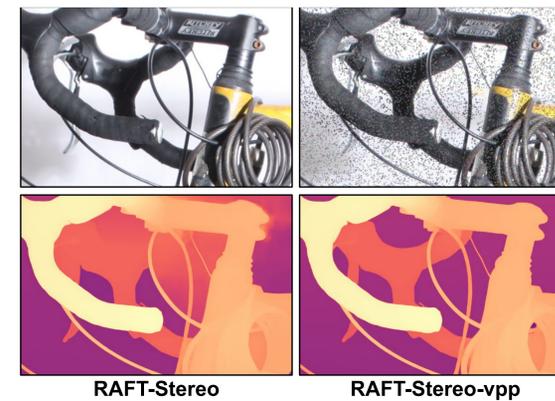

VPP with off-the-shelf stereo networks (trained on real data)

Qualitative Results

Middlebury 2014

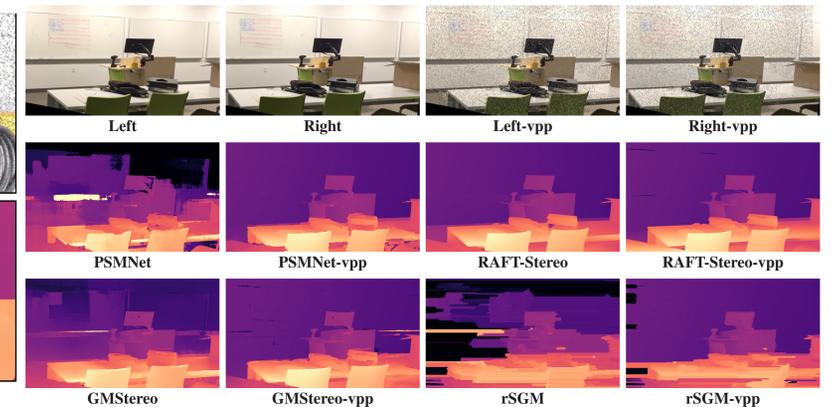### Middlebury 2021

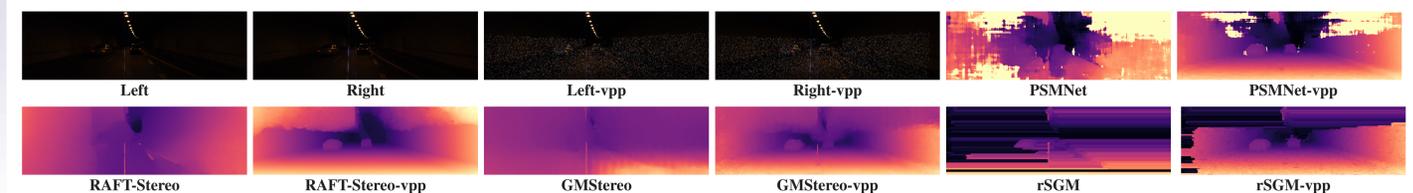### KITTI 2015

References

Paper   Supplementary   Code