DepthComp: Real-time Depth Completion Based on Prior Semantic Scene Segmentation

Amir Atapour Abarghouei, Toby P. Breckon
Durham University, UK

**Issue**: efficient depth filling with surface relief continuity via prior semantic segmentation

**Approach**: completing depth images:

1. **Segmentation** of colour image. Any segmentation technique can be used. Here, the semantic segmentation approach in [1] is used.

2. **Depth holes** are categorized into a bounded set of 12 explicit completion cases for depth holes (defined as missing depth values in one object within a single row).

3. Holes are processed in three passes: primary row-wise, column-wise and secondary row-wise.

4. **Relief**, texture and slight depth discontinuities are propagated into the hole based on completion cases with unresolvable cases left for subsequent passes.

**Evaluation**: synthetic and real-world imagery:

- **Evolutions over Synthetic Test Image Simulating Exaggerated Relief.**

- **Evolutions over KITTI Test Images.**

**Source Code**: https://github.com/atapour/depthComp

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