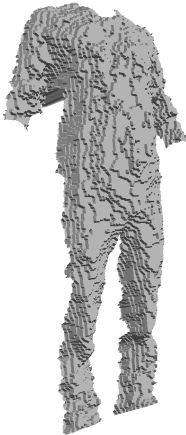


# Single-Shot Depth Super-Resolution from Shading

Haefner, Quéau, Möllenhoff, Cremers; CVPR 2018



$I$



$z_0$



$z$

**Problem:** Given one RGB-D pair  $(I, z_0)$ , find super-resolution depth  $z$ .

## Given:

- Full Matlab implementation
- Implementation partially in CUDA already
- Gateway function between Matlab and GPU for step-by-step testing and debugging
- Refactored code and data for a quick-start
- Paper

## Goals:

- Port framework to GPU
- At least the optimization should run on the GPU
- At best everything should run on the GPU in the end
- Optimization consists of: two least-squares approaches and one nonlinear optimization update

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