Joint Semantic Segmentation and 3D Reconstruction from Monocular Video A. Kundu, Y. Li, F. Daellert, F. Li, J. M. Rehg (ECCV 2014)



Presents a method for joint inference of both semantic segmentation and 3D reconstruction

Contributions:

- Introduces a novel higher order CRF model for joint inference of 3D structure and semantics in a 3D volumetric model
- The framework does not require dense depth measurements and utilizes semantic cues and 3D priors to enhance both depth estimation and scene parsing
- Presents a data-driven category-specific process for dynamically instantiating potentials in the CRF
- Evaluates on monocular sequences such as CamVid and Leuven