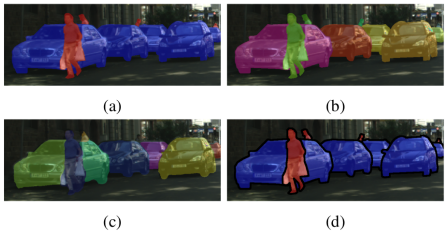
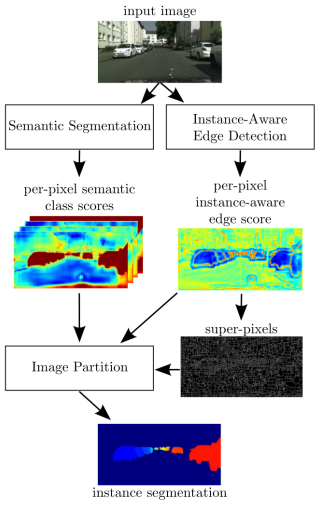
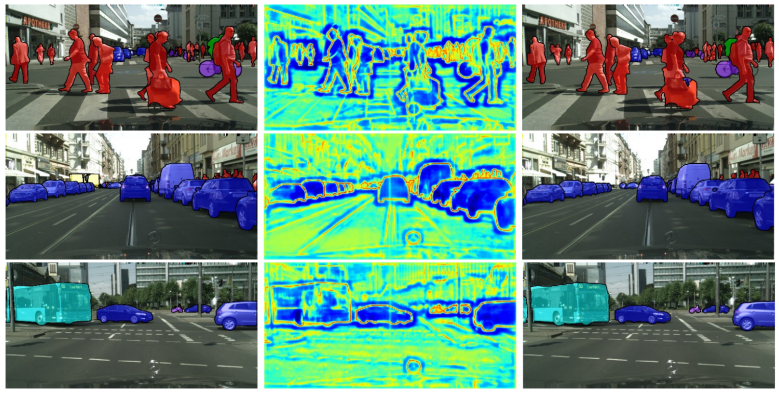
InstanceCut: from Edges to Instances with MultiCut

A. Kirillov, E. Levinkov, B. Andres, B. Savchynskyy, and C. Rother (ARXIV 2016)







(a) Ground truth (b) Edges map (c) InstanceCut prediction

- Instance-aware semantic segmentation
- Challenges:
  - Meaningless labels (car number 5)
  - Varying number of objects
  - Set of pixels vs. bounding boxes
  - Need for a more refined labelling of the training data (rare classes)
- An instance-agnostic semantic segmentation using CNNs
- All instance-boundaries using a new instance-aware edge detection model
- Combined into a novel MultiCut formulation
- Evaluated on CityScapes: particularly well for rare object classes
- Not handled: instances that are formed by disconnected regions in the image