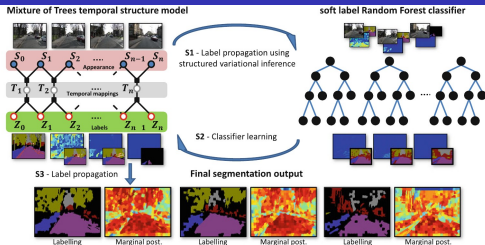


Mixture of Trees Probabilistic Graphical Model for Video Segmentation

V. Badrinarayanan, I. Budvytis and R. Cipolla (IJCV 2014)



- ▶ Mixture of trees probabilistic graphical model for semi-supervised video segmentation
- ▶ Each component represents a tree structured temporal linkage between super-pixels from first to last frame
- ▶ Variational inference scheme for this model to estimate super-pixel labels and the confidence
 - ▶ Structured variational inference without unaries to estimate super-pixel marginal posteriors
 - ▶ Training a soft label Random Forest classifier with pixel marginal posteriors
 - ▶ Predictions are injected back as unaries in the second iteration of label inference
- ▶ Inference over full video volume which helps to avoid erroneous label propagation
- ▶ Very efficient in term of computational speed and memory usage and can be used in real time
- ▶ Evaluation using the challenging SegTrack dataset (binary segmentation), CamVid driving video dataset (multi-class segmentation)