University at Buffalo
The State University of New York

Department of Computer Science and Engineering

Presents

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Semantic Segmentation of Street Scenes

Recent advances in techniques for capturing large scale models of urban environments, give rise to many novel applications which require semantic annotation of the available data. I will present a novel approach for image semantic segmentation of street scenes into coherent regions, while simultaneously categorizing each region as one of the predefined categories representing commonly encountered object and background classes. We formulate the segmentation on small blob-based superpixels and exploit a visual vocabulary tree as an intermediate image representation. The main novelty of our approach is the introduction of an explicit model of spatial co-occurrence of visual words associated with super-pixels and the utilization of appearance, geometry and contextual cues in a probabilistic framework. I will report results on the challenging benchmark dataset which exhibits diversity of street scenes with varying viewpoints, large number of categories, captured in daylight and dusk.

Bio: Jana Kosecka is an Associate Professor at the Department of Computer Science, George Mason University. She obtained her Ph.D. in Computer Science from University of Pennsylvania in 1996. She was a postdoctoral fellow at the EECS Department at University of California, Berkeley. She is the co-recipient of David Marr's prize and received the National Science Foundation CAREER Award. Jana is an Associate Editor of IEEE Transactions on Pattern Recognition and Machine Intelligence and a Member of the Editorial Board of International Journal of Computer Vision. Her general research interests are in Robotics and Computer Vision. In particular she is interested 'seeing' systems engaged in autonomous tasks, acquisition of static and dynamic models of environments by means of visual sensing and human-computer interaction.

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