

Graduate Seminar



Semantic Understanding for Robot Perception

Jana Kosecka

Associate Professor
Department of Computer Science
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Thursday, February 23rd

4:30 pm Scaife Hall 125

Abstract:

Advancements in robotic navigation, mapping, object search and recognition rest to a large extent on robust, efficient and scalable semantic understanding of the surrounding environment. In recent years we have developed several approaches for capturing geometry and semantics of environment from video, RGB-D data, or just simply a single RGB image, focusing on indoors and outdoors environments relevant for robotics applications.

I will demonstrate our work on predicting locations of generic objects in videos acquired by a moving vehicle, for detailed semantic parsing using deep convolutional neural networks (CNNs), 3D reconstruction and object detection and object pose recovery from single RGB image. The applicability of the presented techniques for autonomous driving, service robotics, mapping and augmented reality applications will be discussed.

Bio:

Jana Kosecka is an Associate Professor in the Department of Computer Science at George Mason University, where her research explores Computer Vision and Robotics. She focuses on 'seeing' systems engaged in autonomous tasks and the acquisition of static and dynamic models of environments by means of visual sensors and human-computer interaction. Prof. Kosecka has published over 100 publications in refereed journals and conferences and is a co-author of a monograph titled Invitation to 3D vision: From Images to Geometric Models. Prof. Kosecka is a chair of the IEEE RAS Technical Committee of Robot Perception, Associate Editor of IEEE Robotics and Automation Letters and International Journal of Computer Vision. She has held visiting positions at Stanford University, Google, and Nokia Research. Prior to joining George Mason, she was a postdoctoral fellow at the EECS Department at University of California, Berkeley, affiliated with Robotics Laboratory and PATH. Prof. Kosecka has received the Marr Prize in Computer Vision and a National Science Foundation CAREER Award.

SEMINAR NOTES: (REFRESHMENTS SERVED AT 4:00 PM)

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