



## **Real-Time Tracking of 3D Objects with Computer Vision**

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### **Abstract**

In this talk, I will present different methods for estimating the 3D pose of objects reliably and in real-time using a monocular camera, with applications to Augmented Reality and Robotics. I will first briefly introduce the required notions from projective geometry and numerical optimization. I will then discuss recent binary keypoint descriptors, which are very fast and useful for textured objects, and methods to learn such descriptors. In the last part of the talk, I will discuss approaches for the case of untextured objects, which is much more challenging and more important in practice.

*Keywords: 3D tracking, Binary descriptors, Descriptor learning, Fast template matching*