

# Marker-less Tracking for Augmented Reality: A Learning-based Approach

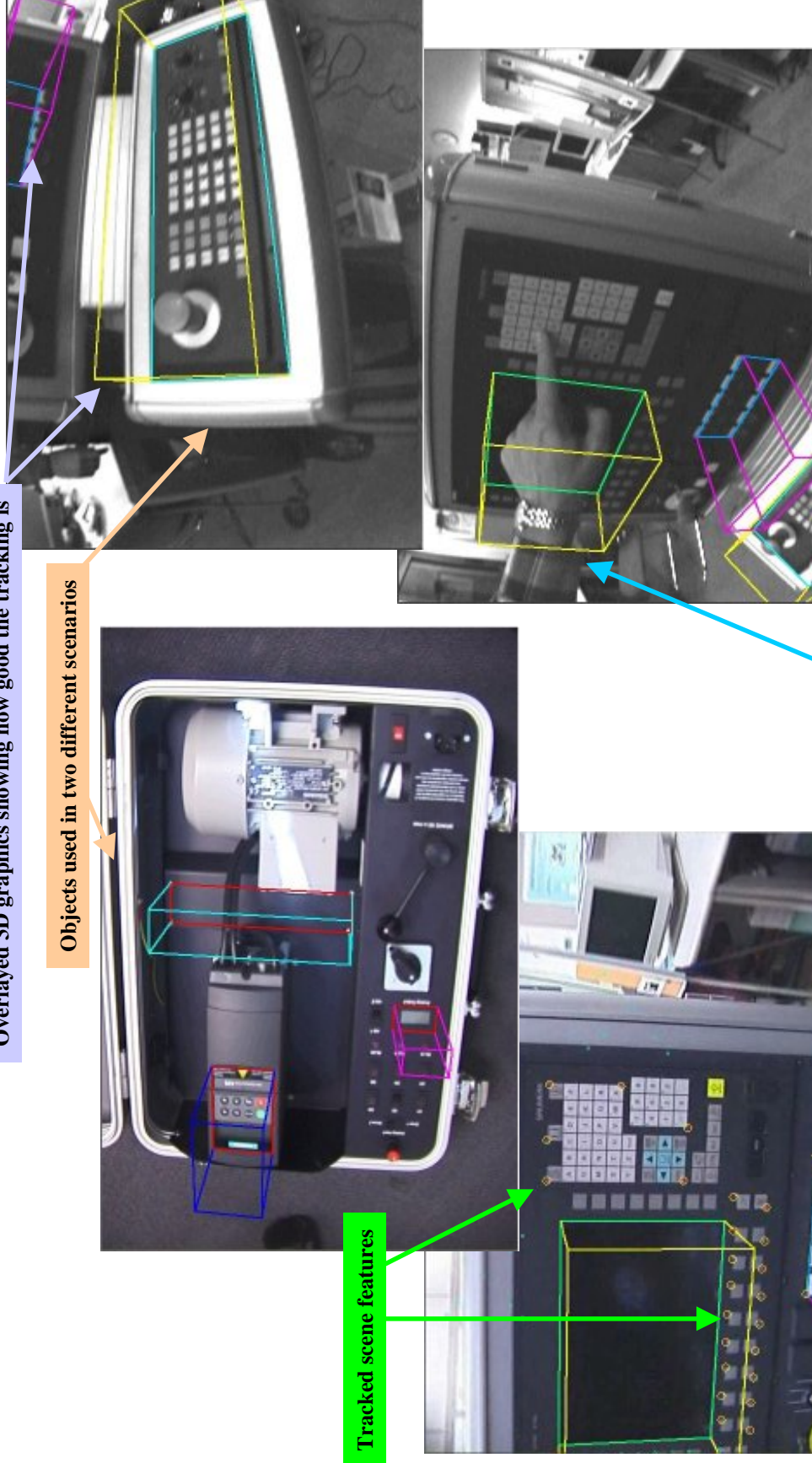
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**Abstract:** A real-time marker-less tracking system will be demonstrated. The method (ISMAR'02) is based on a two stage process. The first stage learns the underlying 3D structure of a scene while the associated AR system is working with an existing tracking system. After learning, the second stage starts tracking the learned scene features. We will demonstrate the tracking system on two different scenarios using off-the-shelf USB/FireWire cameras with close to real-time, i.e., over 20fps, performance.

Overlaid 3D graphics showing how good the tracking is

Objects used in two different scenarios

Tracked scene features



Tracking under difficult circumstances (occlusion with non-rigid moving objects)