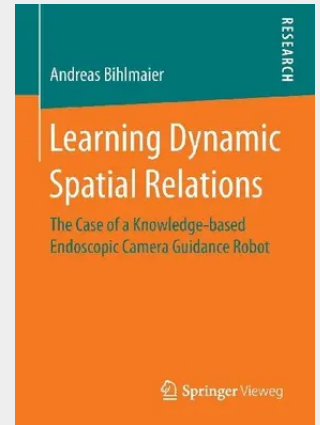


Learning Dynamic Spatial Relations

The Case of a Knowledge-based Endoscopic Camera Guidance Robot

Andreas Bihlmaier describes a novel method to model dynamic spatial relations by machine learning techniques. The method is applied to the task of representing the tacit knowledge of a trained camera assistant in minimally-invasive surgery. The model is then used for intraoperative control of a robot that autonomously positions the endoscope. Furthermore, a modular robotics platform is described, which forms the basis for this knowledge-based assistance system. Promising results from a complex phantom study are presented.

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