Active object search exploiting probabilistic object-object relations.

Summary: This paper proposes a probabilistic object-object relation based approach for an active object search. An important role of mobile robots will be to perform object-related tasks and active object search strategies deal with the non-trivial task of finding an object in unstructured and dynamically changing environments. This work builds further upon an existing approach exploiting probabilistic object-room relations for selecting the room in which an object is expected to be. Learnt object-object relations allow to search for objects inside a room via a chain of intermediate objects. Simulations have been performed to investigate the effect of the camera quality on path length and failure rate. Furthermore, a comparison is made with a benchmark algorithm based the same prior knowledge but without using a chain of intermediate objects. An experiment shows the potential of the proposed approach on the AMIGO robot.

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