

## SFB/TR 8 Spatial Cognition / IQN Video Conference

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### Reasoning about Space and Robotic Perception

Much work in computer vision in the 70's and 80's aimed at the development of high-level vision, whereby the numerical processes feed a symbolic level of knowledge with which an agent is capable of interpreting the world. These early attempts were frustrated by the non-existence at the time of efficient algorithms for dealing with uncertainty, of tractable knowledge representation formalisms and also by the rudimentary stage of image-processing algorithms. Since then, important advances in Artificial Intelligence (AI) suggest that we may be at the stage of bridging the gap between AI and Computer Vision. In this talk, I will present my current and past contributions to bridging the gap between knowledge representation in AI (in particular Qualitative Spatial Reasoning QSR) and computer vision, spanning from the development of QSR formalisms for robot sensor data assimilation, for the interpretation of neuroimages for schizophrenia research and for the automated solution of puzzles containing non-trivial objects, such as strings and holes.

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