Spatio-Temporal Reasoning

Reasoning about space and time is a major field of interest in many areas of theoretical and applied AI, especially in the theory and application of temporal and spatial models in planning, high-level navigation of autonomous mobile robots, natural language understanding, temporal databases, and concurrent and distributed programming. Recent years have witnessed remarkable advances in some of the longstanding problems of the field (for instance, new results about tractability for spatial calculi, explicit construction of models, characterization of important subclasses of relations), as well as in the development of new areas (the appearance of new integrated spatio-temporal calculi is one example, as well as the development of multidimensional spatial calculi). Likewise, proposals have been made to remedy some of the weak points of the symbolic approach, by introducing fuzzy versions of classical calculi, or importing nonmonotonic techniques for dealing with incomplete information. At the same time, leaders in AI have sounded the need for solving real problems and making the work on representation and reasoning relevant to the real world. This track is intended to further advance the field of spatio-temporal reasoning, in theoretical aspects as well as practical ones.