Solving the frame problem

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In logic-based AI, knowledge are represented as collection of formulas of formal logic. The frame problem is a difficulty of describing a dynamic system without explicitly representing a large number of obvious facts about things that do not change. In spite of its great difficulty, several approaches now exist that are closed to an adequate solution. In this talk, we will follow John McCarthy's original idea closely, and present the approach based on the situation calculus with the use of circumscription. We will show that the frame problem and its closest twin the ramification problem can be more or less solved in this framework.