

Reasoning and Planning for LTL_f/LDL_f goals

(Keynote)

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Abstract. This talk will be about reasoning and planning for goals expressed over finite traces, instead of states. We will look at goals specified in two specific logics (i) LTL_f , i.e., LTL interpreted over finite traces, which has the expressive power of FOL and star-free regular expressions over finite strings; and (ii) LDL_f , i.e., Linear-time Dynamic Logic on finite traces, which has the expressive power of MSO and full regular expressions. We will review the main results and algorithmic techniques to handle reasoning, planning in deterministic domains, and especially planning in nondeterministic domains. We will also briefly consider stochastic domains. Moreover, we will draw connections with verification and reactive synthesis. The main catch is that working with these logics can be based on manipulation of regular automata on finite strings, for which well-established algorithms are available.