Understanding finite-memory determinacy

Synthesis problem, **Game-theoretic** approach

Specification — Game objective — Model: two-player games — System description / Environment description

Synthesis: ∃? winning strategy

ω-regular, LTL, quantitative...

Finite-memory determinacy

For which **objectives** is **finite memory** sufficient to play optimally in all games?

Attempt to extend results about **memoryless** strategies, e.g., in [Gimbert, Zielonka 2005]... → ...to results about **finite-memory strategies**
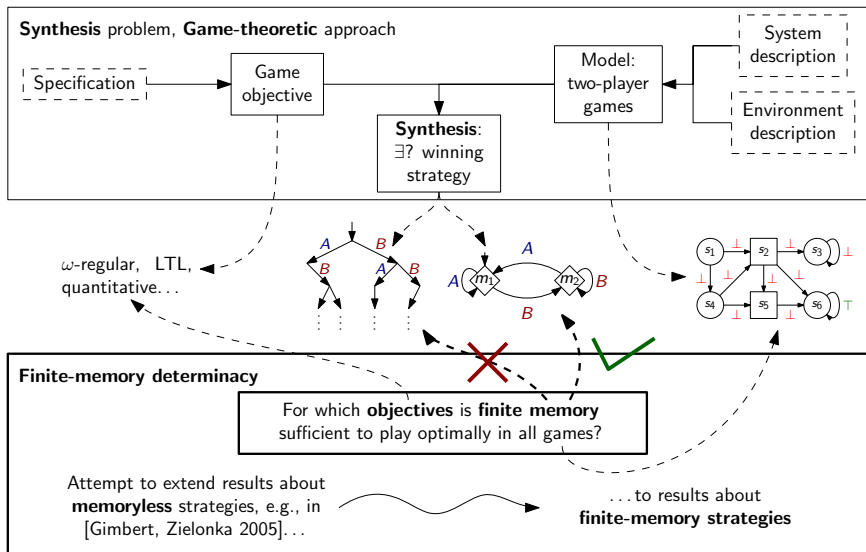
First results: Bouyer, Le Roux, Oualhadj, Randour, Vandenhove, "Games Where You Can Play Optimally with Arena-Independent Finite Memory", CONCUR'20