Record-based Automata for TTR

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Making sense of actions and events observed or expressed via disfluencies, a variety of types of non-sentential utterance, and partial comprehension in a systematic way is a challenge in the field of Natural Language Semantics. There have been several frameworks structured in the past to provide computational insights to extract this information. In this research work, we particularly talk in detail about Robin Cooper's framework for representing such hindrance through finite automata-based Type Theory with Records (TTR), which enables a uniform theory of grammar, semantics, and interaction to maintain past insights and paved the way for probabilistic based semantics. In addition, it's a proven fact that actions and events are closely related to time. Therefore, we also considered the 13 temporal relations created by James Allen in his research work. Later, the actions and events based temporal relations are constructed using superposition theorem by representing them in the form of MSO (Monadic Second Order) logic, which was related to finite-state methods as proved by Büchi, Elgot, Trakhtenbrot research work. This helped us to extract temporal information and to find out new results in this field of research. Finally, we implemented Gap-based string inference to retrieve all minimum possible strings required to construct string L from string L'.