Using Knowledge-based System Techniques in the Protocol Design Process

Abstract

This paper describes the knowledge-based system techniques, such as program transformation and artificial intelligence techniques, used to design a reliable protocol. Program
transformation techniques can be used in deriving protocol specifications. AI techniques, such as search algorithms and theorem proving, can be used to reduce the global space search. AI techniques can also be used to help correctness proving in protocol validation and verification. This study is based on the Alternative Bit Protocol (ABP).

References


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Index Terms

Computer Science

Artificial Intelligence

Keywords

Axioms

Correctness proving

Deductive inference

Intelligent assistant

Knowledge-based system

Interface engine

Protocol validation

Protocol verification
Reachability analysis