

Paper	Category	Input	Main Approach	Need Extra Human Interactions	Output	Benefits of the system
Specification Extraction by Symbolic Execution	Formula Extraction	1) program in pseudo code ; 2) user provided input for the program	dynamic symbolic execution guided by concrete program execution	Yes	Computation Formula and Path Conditions	Understand the essential computation and constraints of complex programs
Prospex: Protocol Specification Extraction	Protocol Analysis	sequence of typed messages between clients and servers	reverse engineering the protocol state machine	No	application-level protocol specification: meaningful message formats and protocol state machines	automatically find vulnerabilities in real-world applications
Mining API Patterns as Partial Orders from Source Code: From Usage Scenarios to Specifications	API usage mining	user-specified APIs; API client code	1. use push-down model checking technique to generate API invocation sequences in a program; 2. A scenario extraction algorithm is used to extract different API usage scenarios from the API invocation sequences; 3. A miner summarizes different usage scenarios as compact partial orders. 4. Specifications are extracted from the frequent partial orders using a specification extraction algorithm	No	frequent partial orders; API ordering rules (specification)	Correct and effective API reuse
Developing and evaluating an IT specification extraction system	Knowledge management	Web pages	prototype design and performance validation	No	IT product specifications	proposes an integrative framework to examine IT product specification information and demonstrates that the system is effective for IT application