Conclusions

We provide a general framework for the empirical influence study of compiler optimization on symbolic execution w.r.t. MC/DC. Empirical studies indicate that instruction combining (IC) optimization is the dominant component influencing the effectiveness and efficiency of symbolic execution.

■We propose a method to extract the program features w.r.t. IC optimization, based on which an optimization recommendation method for symbolic execution is proposed to improve the coverage. Experimental results indicate that the recommendation method is effective.