NV: An intermediate language for network verification

Abstract— NV is great

1 INTRODUCTION

Stuff

2 MOTIVATING EXAMPLES

Key ideas

3 LANGUAGE

(1) Syntax and overview
(2) Features, *e.g.*, symbolic variables, requires, types, fixed point etc.
(3) Semantics: (1) Asychronous semantics (simulation), and (2) Stable path semantics (SMT)

4 TOOLS

(1) Simulator
(2) SMT encoding (stable)
(3) SMT encoding (bounded model checker)
(4) Randomized testing / Fuzzing?
(5) Symbolic execution
(6) Abstraction / symmetries
(7) Abstraction refinement for failures
(8) Compiler to P4
(9) Convergence checking?

5 EVALUATION

(1) comparison to Batfish?
(2) run the tool on real networks to find bugs?

6 RELATED WORK

7 CONCLUSION

REFERENCES