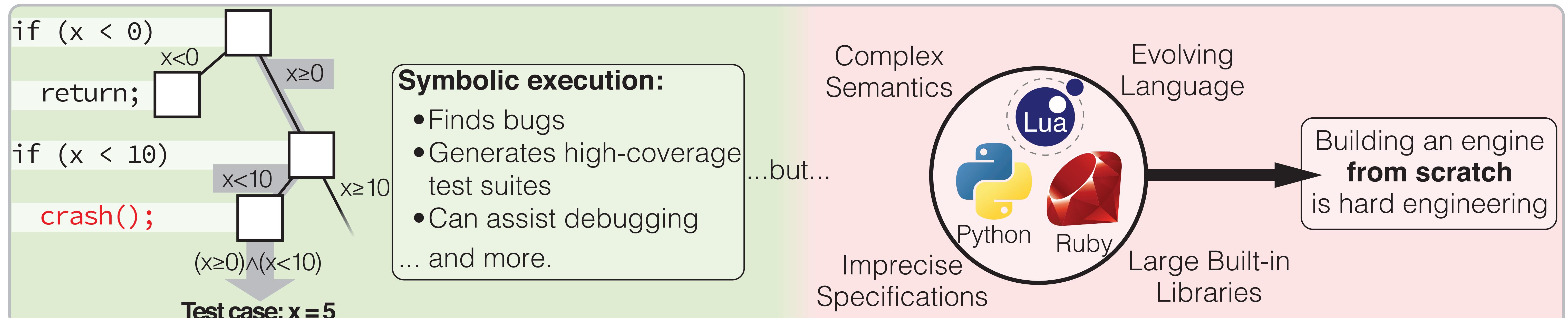


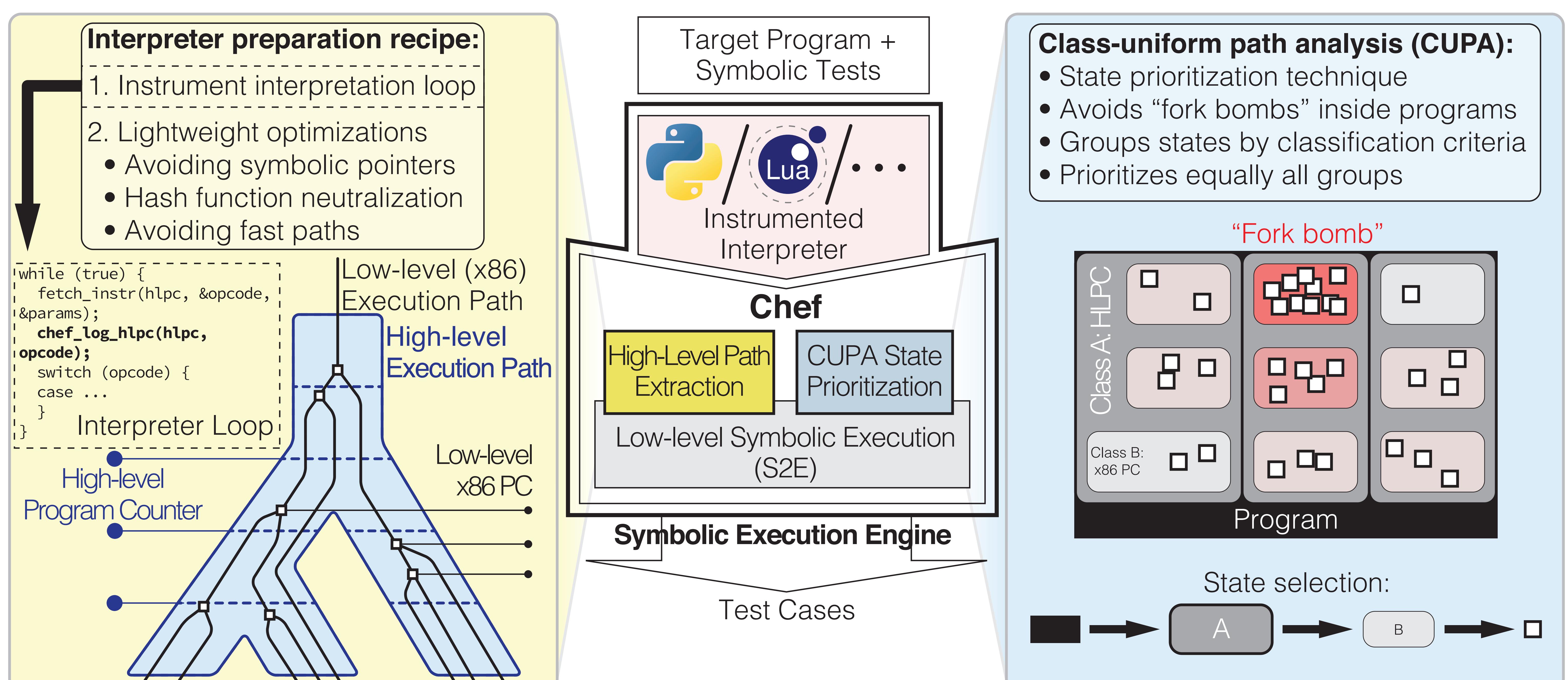
### Problem:

Symbolic execution engines are hard to build  
for interpreted languages



### Our Idea:

The interpreter is an executable language specification  
and it's the only one that matters

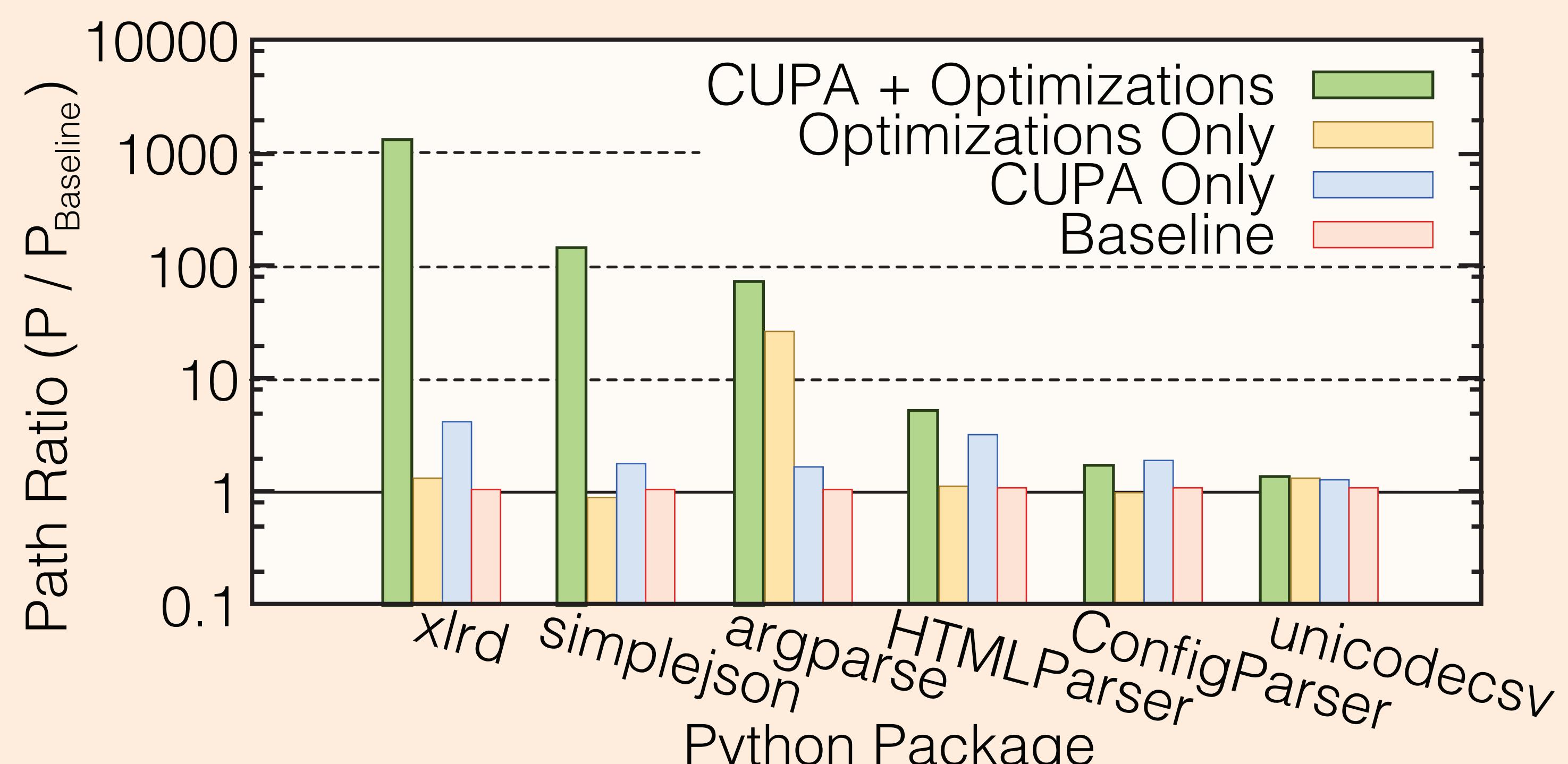


### Use Cases

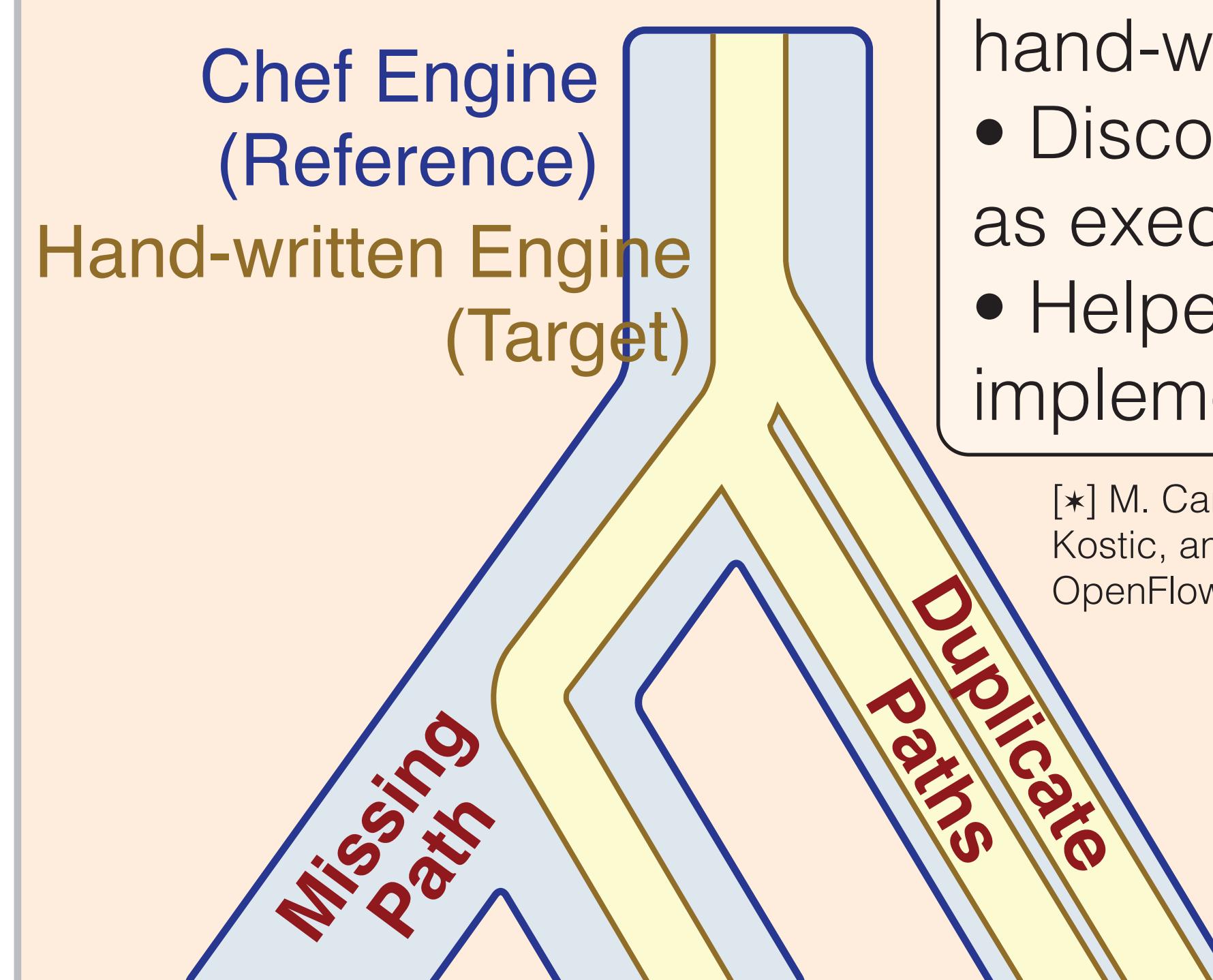
Test Case Generation

Reference Implementation

Up to 1000x more tests generated with CUPA + optimizations



Execution Tree Delta



- Assist in developing hand-written engines
  - Discover implementation bugs as execution tree deltas
  - Helped NICE<sup>[\*]</sup> developers find implementation bugs
- [\*] M. Canini, D. Venzano, P. Peresini, D. Kostic, and J. Rexford. "A NICE way to test OpenFlow applications." NSDI 2012.

