The OSTRICH String Solver

Straight-Line Formulas

- ► $S ::= x := f(\bar{x}) \mid \mathbf{assert}(R(\bar{x})) \mid S; S$
- ► Soundness + completeness guarantee for SL formulas
- ► Complex string functions, including replaceall and transducers

Backwards-propagation

- Main algorithm for SL formulas
- $ightharpoonup z = x \circ y$; assert $(z \in L)$
- ▶ assert($x \in L_1$); assert($y \in L_2$)

Extensions

$$|x| < |1|$$

$$|x| = |1|$$

$$|x| > |1|$$

$$0y = 11z$$

$$x = 1x' \land x'0y = 1z$$