Symbolic Verification via Program Transformation

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Topic Recapitulation

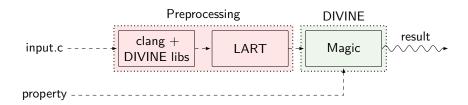


verification of programs with inputs

Topic Recapitulation



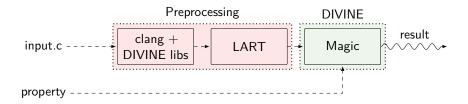
- verification of programs with inputs
- transform the program to manipulate symbolic representation instead of concrete inputs



Topic Recapitulation



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■ Diploma thesis: prototype that can abstract values on stack



II new concept of transformation:



- **11** new concept of transformation:
 - enables abstraction of data on the heap



- **1.** new concept of transformation:
- enables abstraction of data on the heap
- added support of arrays with abstract values



- **II** new concept of transformation:
 - enables abstraction of data on the heap
 - added support of arrays with abstract values
 - get rid of necessity to compute shapes of data structures
 - enables arbitrary structure with abstract data



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2 polishing of code:

■ simplification of whole process (from 6000 loc. to 2500 loc.)



- **II** new concept of transformation:
 - enables abstraction of data on the heap
 - added support of arrays with abstract values
 - get rid of necessity to compute shapes of data structures
 - enables arbitrary structure with abstract data
- polishing of code:
 - simplification of whole process (from 6000 loc. to 2500 loc.)
- 3. finishing paper resubmition
 - evaluation should now cover bigger portion of SV-COMP
 - TODO preliminary results



May:

lacktriangle evaluation + paper submission



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June - September

string abstraction in cooperation with italian Ph.D. student



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- further work on memory abstractions



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- work on utilization of SMT solving in verification