

An LLVM Refinement Checker and its Applications

YIJI ZHANG¹, LENORE D. ZUCK¹, KEDAR NAMJOSHI²

UNIVERSITY OF ILLINOIS AT CHICAGO¹, BELL LABS²

PRESENTER: JORDAN TORF¹



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NOKIA Bell Labs

Compilers should not miscompile!

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A problem has been detected and Windows has been shut down to prevent damage
to your computer.

The problem seems to be caused by the following file: kbdhid.sys
MANUALLY_INITIATED_CRASH

If this is the first time you've seen this stop error screen,
restart your computer. If this screen appears again, follow
these steps:

Check to make sure any new hardware or software is properly installed.
If this is a new installation, ask your hardware or software manufacturer
for any windows updates you might need.

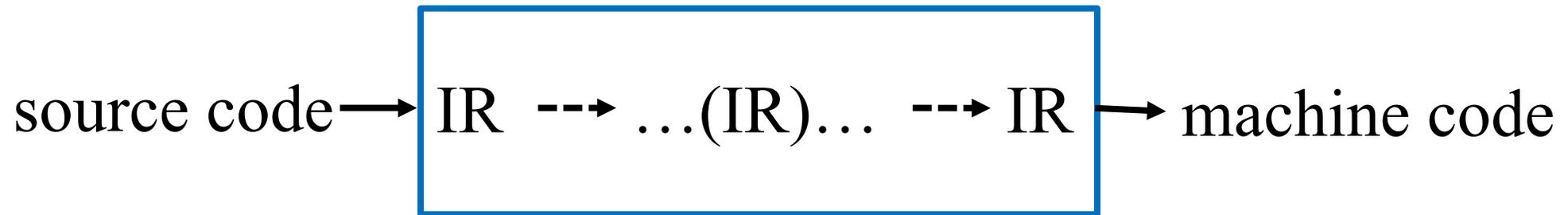
If problems continue, disable or remove any newly installed hardware
or software. Disable BIOS memory options such as caching or shadowing.
If you need to use safe mode to remove or disable components, restart
your computer, press F8 to select Advanced Startup Options, and then
select Safe Mode.

Technical Information:
*** STOP: 0x000000e2 (0x00000000, 0x00000000, 0x00000000, 0x00000000)
*** kbdhid.sys - Address 0x94efd1aa base at 0x94efb000 DateStamp 0x4a5bc705
```



What could go wrong?

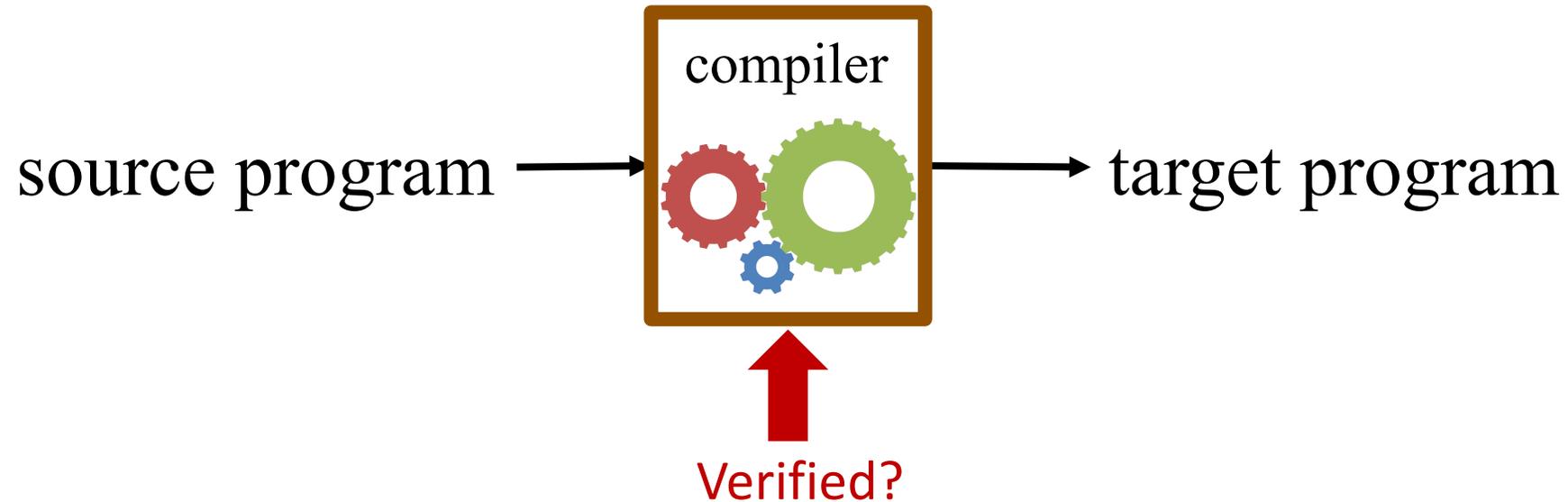
Compilation: sequence of transformations



our focus: optimizations

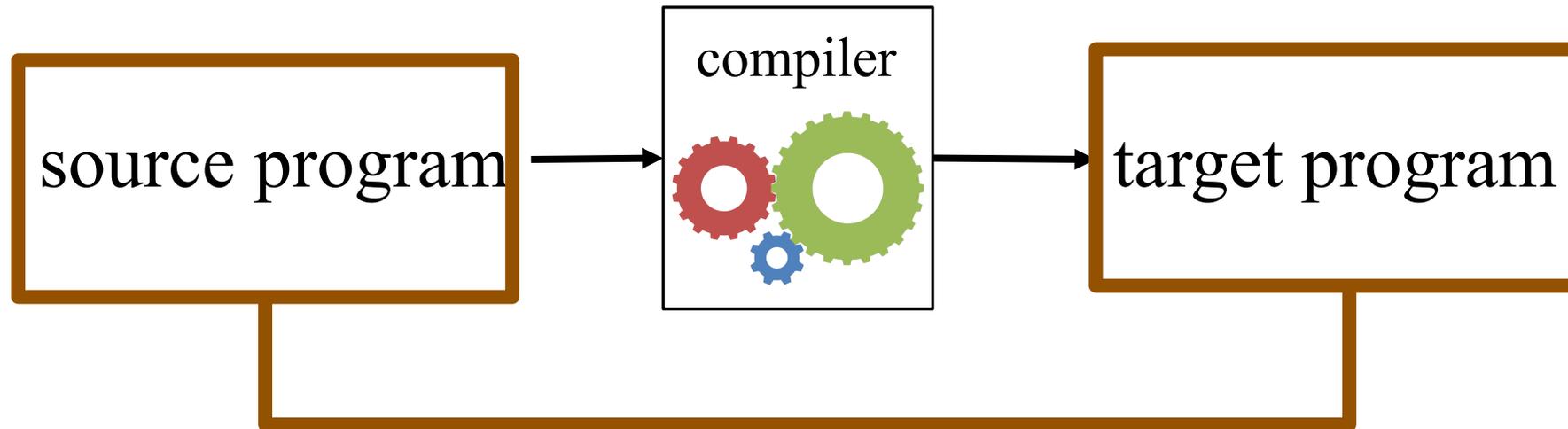
*IR: Intermediate Representation

Verifying compiler



Examples: CompCert, Vellvm etc.

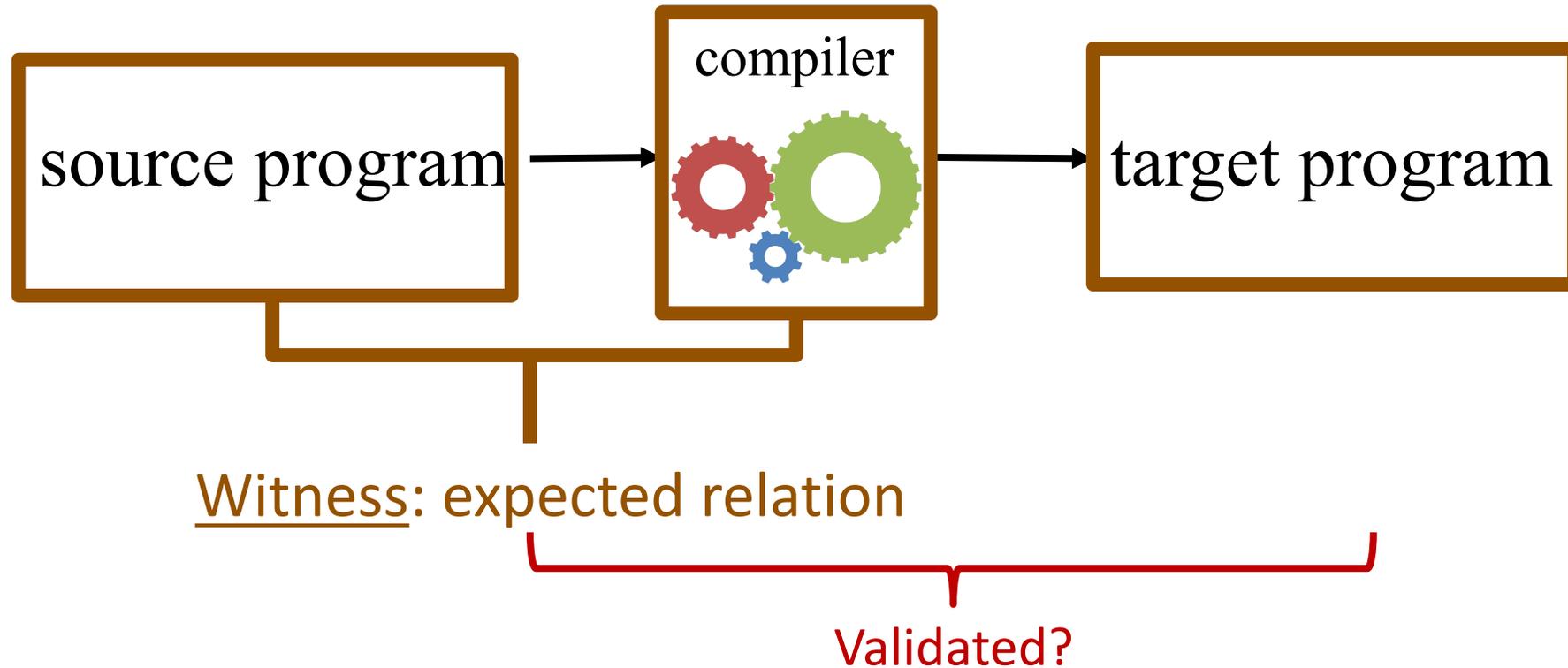
Validating each translation

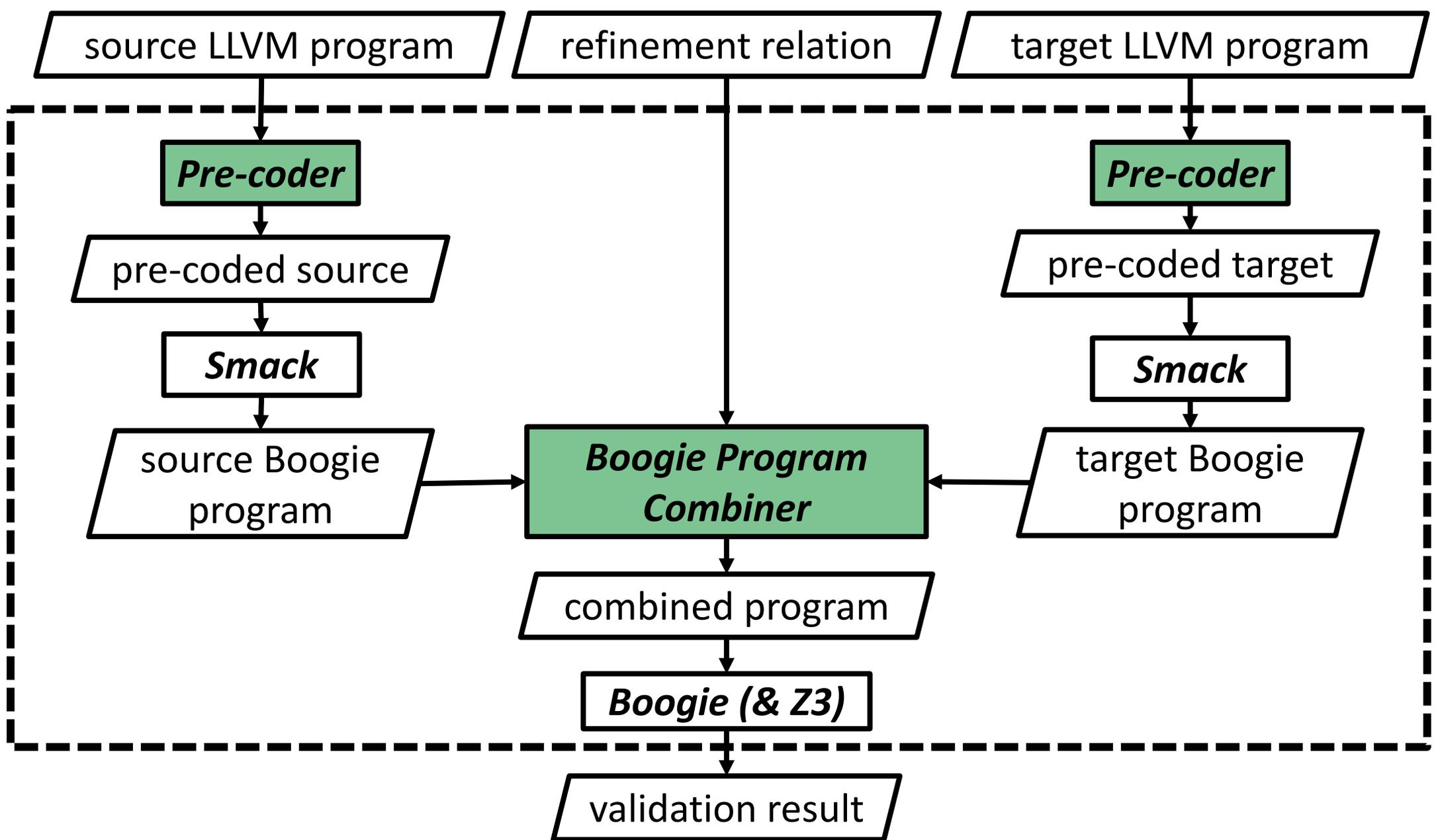


Examples: TVI, TVOC etc.

Validated?

Translation validation by witnessing





Thank you!



Any questions

Contact: Yiji Zhang, yzhan79@uic.edu

(“Sorry that I could not be there due to Visa issues ☹️. -- Yiji”)