Cobra - An Interactive Static Code Analyzer

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Abstract—Sadly we know that virtually all software of any significance has residual errors. Some of those errors can be traced back to requirements flaws or faulty design assumptions; others are just plain coding mistakes.

Static analyzers have become quite good at spotting these types of errors, but they don’t scale very well. If, for instance, you need to check a code base of a few million lines you better be prepared to wait for the result; sometimes hours.

Eyeballing a large code base to find flaws is clearly not an option, so what is missing is a static analysis capability that can be used to answer common types of queries interactively, even for large code bases. I will describe the design and use of such a tool in this talk.

BIOGRAPHY

Gerard Holzmann got his PhD from Delft University of Technology in The Netherlands in the deep dark days before there were PCs, iphones, or even an internet. He joined Bell Labs in Murray Hill, New Jersey, to help fix some of these things, but others beat him to it. At Bell Labs he did develop one of the first digital darkroom programs, and early versions of software analysis tools like Spin. After twenty-some years at Bell Labs he joined NASA/JPL to start a lab for reliable software (LaRS). For unclear reasons he was later made a JPL fellow, an ACM fellow, and was elected to the National Academy of Engineering. He left JPL in January 2017 to start a new research and consulting company called Nimble Research.