Symbolic analysis is a type of program analysis that can effectively identify semantics of programs. Previous research has shown that it is useful for automatically generating test inputs, detecting bugs, debugging programs and analyzing malware. The challenge of symbolic analysis is to make it scalable to large software while still preserving its precision.

In this talk, I will first introduce an efficient symbolic analysis, namely segmented demand-driven symbolic analysis, that ensures the scalability and precision of the analysis, and I will then present program representations we developed to enable such analysis on solving practical problems, such as verifying software patches and detecting bugs in Android apps.

At the end of the talk, I will present a set of problems I am currently interested in solving, with the goals of soliciting collaborators and graduate students to work on the problems with me.

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She received her Ph.D. in Computer Science from the University of Virginia in 2010. Her research focuses on program analysis and testing for reliable, secure and fast software. Dr. Le has published papers in ICSE, FSE, TOSEM, TSE and ISSTA, and is a winner of NSF Career Award (2014), Google Faculty Research Award (2011), FSE Best Presentation Award (2008) and Google Anita Borg Memorial Scholarship (2007).

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