

## Presentation Abstract

# A Method for Validating Binary Optimizers

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In this presentation, we propose a method for validating binary optimizers. Our approach does not execute the whole program for validation but selects a small part of code (1 to 100 instructions) for the target test code. It executes the target code and its optimized code with several input data during binary optimization. One benefit is that we can test a small part of an actual customer's code during binary optimization. Our approach can be used to test multiple input data not included in the target code, which is the most beneficial aspect of the approach. If the results are the same after execution, we will use the optimized code for the final output code. If the results differ, we can use the input code for the final output code to maintain compatibility. We implemented our approach in our binary optimizer and successfully detected one bug. We used a very small binary program to observe the worst case of increased in compilation time and output binary file size. Our experiment showed that our approach increases optimization time by only 0.02% and output binary file size by 8%.

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This is the abstract of an unrefereed presentation, and it should not preclude subsequent publication.

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