AUTHOR:

HARRISON ASHLEY ANKERS

CID:

01211208

TITLE:

Generating Random Julia Code to Evaluate Julia Compiler Optimizations

ABSTRACT:

With growing reliance and trust in programming languages, it is fundamental that programs abide by its set rules to ensure user confidence.

This report details the creation of a Julia-based Julia evaluating fuzzer. This fuzzer generates syntactically correct Julia code to expose flaws amongst different Julia optimization levels. Through this, two issues with the language were found: a strange for loop variable behaviour that is set to be fixed in the next release, and a precision issue with the standard function "muladd".