2018 Research Interest/Project Ideas

Tiark Rompf

tiarkrompf.github.io

===

Collapsing Towers of Interpreters

In recent work, we have shown how a one-pass compiler can be systematically derived from a tower of interpreters, i.e., a sequence of interpreters that runs each other. The present formulation of this result is based on self-applicable Lisp interpreters (http://cs.purdue.edu/~rompf/papers/amin-draft2017a.pdf). In this project, we plan to extend this approach to heterogeneous towers, e.g., a JavaScript interpreter running on an ARM ISA, that is emulating an x86 processor, on which a Python interpreter is executing user code. In this case, the approach would allow to mechanically derive a Python to ARM compiler.