

CakeML: Verified Computation/Compilation Stories

(Invited Talk)

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CakeML is a fully verified compiler for a typed functional programming language similar to SML, featuring mechanised proofs from lexing down to machine code. The first version of the system was released in 2014, and has since been through one major version change. The now-developing CakeML eco-system has prompted a number of interesting verification challenges in and around the core compiler technology. After introducing the CakeML “context”, I will describe one current challenge, where mechanisation throws up a number of interesting choices, and where the mathematical “high road” seems maximally awkward.