The CakeML Verified Compiler and Toolchain
(Invited Talk)

Magnus O. Myreen
Chalmers University of Technology, Sweden

Abstract.
The CakeML project has built an ecosystem of proofs and tools around an ML dialect called CakeML. The ecosystem includes a proven-correct compiler that can bootstrap itself within the logic of an interactive theorem prover (HOL4).

In this talk, I will give an overview of the entire ecosystem; I will show how HOL4 provides an architecture that scales to such large developments; and I will explain where and how the CakeML project uses proof automation. The talk will conclude with a discuss of where I believe CakeML would gain most from improved proof automation.

For more: https://cakeml.org/