# LOWER AND SIMULATE LLHD USING MLIR

SIMON RODONI

Department of Computer Science
ETH Zürich

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## ABSTRACT

The current hardware design workflow is sparse, with tools being mostly monolithic and proprietary. This introduces unnecessary redundancies, as well as possible implementation discrepancies between tools. LLHD [2] brings a simple IR, yet still able to fully capture existing HDLs. MLIR [1] provides a powerful and open source infrastructure to implement LLHD and enable a new and open source HDL workflow.

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# BIBLIOGRAPHY


[1] Chris Lattner, Mehdi Amini, Uday Bondhugula, Albert Cohen, Andy Davis, Jacques Pienaar, River Riddle, Tatiana Shpeisman, Nicolas Vasilache, and Oleksandr Zinenko. "MLIR: A Compiler Infrastructure for the End of Moore's Law." In: (Feb. 25, 2020). arXiv: 2002.11054v2 [cs.PL].

[2] Fabian Schueki, Andreas Kurth, Tobias Grosser, and Luca Benini. "LLHD: A Multi-Level Intermediate Representation for Hardware Description Languages." In: (2020).

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