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The BondMachine Project

Tuesday, June 11, 2024 5:50 PM (30 minutes)

Since 2017 we started R&D on framework development for co-designing (HW/SW) computational systems, targeting mainly FPGAs. The main innovation of the project, named BondMachine (BM), is the creation of a new type of architecture, dynamically adapted to the specific problem. The framework contains a set of tools to manipulate the architectures, spanning from the creation to the simulation and the implementation in terms of HDL code. We also developed the support to enable the creation of BMs starting from high-level languages. To this end a compiler allow to build the BM while compiling the code; an assembler transforms fragments of assembly code into BMs and uses them as building blocks for more complex systems. This talk will provide an overview of the described framework detailing also how it can be used to put Neural Networks and Quantum Computing simulators on FPGAs.

Website

Github

Talk's Q&A

During the talk

Talk duration

25'+12'

Will you be able to present in person?

Yes

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Session Classification: Sharable HDL Cores

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