

QuickDough: A Rapid FPGA Accelerator Design Framework Using Soft Coarse-Grained Reconfigurable Architecture Overlay

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1 Background of FPGA

what is FPGA? 10x slower, 100xfaster

2 When can we benefit from FPGA computation?

FPGA, GPU and Multicore. FPGA computation (when can we benefit from it?) customization

3 Challenges of FPGA Programming

Development of FPGA From algorithms to HLL models – minutes
From HLL models to HDL model – Hours
From HDL models to Bitstream – Dozens of minutes to hours
From HLL models to overlay, overlay to HDL models and implementation

4 QuickDough: A Rapid HW-SW Compilation Framework Using SCGRA Overlay

Rapid Compilation using SCGRA Overlay HW-SW codesign on a CPU+FPGA System

5 FPGA Acceleration System

6 Design Productivity And Performance Comparison

7 Implementation And Overhead

8 Automatic Customization

9 Predictable SCGRA

10 Customization is fast!

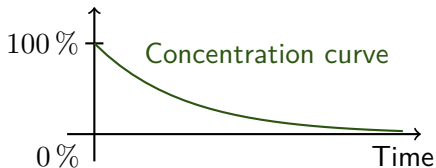
11 What can we benefit from customization?

performance, power, overhead

12 FPGA Overlay Based

1. The conference beamer says “no signal”.
2. The presentation notebook does not accept your USB stick.
3. The PDF reader does not open your presentation.
4. After 30 seconds, the notebook's display goes to sleep.
5. Your audience gets tired and finally falls asleep.
6. After the talk, there are only weird questions asked.

13 Address the audience



14 Conclusion

1. Give a conclusion, where you **recall** the **main points**!
2. This also gives the snoring persons time to wake up!

Questions?