OPEN SOURCE IN TEACHING RISC-V

Open Source in Education @ BCS-OSSG

Prof. Dr.-Ing. Stefan Wallentowitz

Fakultät für Informatik und Mathematik
About Me

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What is RISC-V?

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▶ Great for teaching computer organization and computer architecture, right?!
Opportunities & Challenges

▶ Opportunities

▶ Many open source processor cores
▶ Rich software ecosystem and active community
▶ All I need, right?

▶ Challenges

▶ Teaching practically oriented to computer science students
▶ Students have virtually no background in digital design
▶ Simulators and hardware emulation not really accessible (and fancy) to students

Goal: Reuse, improve and provide open source tooling for this purpose
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Demo
Practical Computer Architecture Education with µArch Traces

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Demo

Testbench

Core

μarch Tracer (DPI)

Trace File

Pipeline Viewer

pip install pipeline-viewer

Figure 1:
RISC-V Academia and Education SIG

- Special interest group to coordinate efforts
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Next meeting: Nov 2023, GMT
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Ongoing Effort to Build Library of Educational Materials

► You can find many university courses that use RISC-V on the website

RISC-V Educational Materials

These materials are curated by educators around the world. You can add to this list by submitting entries via pull request on GitHub. Please contact us if you have any concerns or questions.

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<th>Author/University</th>
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<th>Level</th>
<th>Platform</th>
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- Goal: Platform for educational materials
Thanks for your Attention!

More on https://riscv.cs.hm.edu

Find me on Twitter: @wallento