Workshop on RISC-V and OpenPOWER in HPC

Old program: https://ics2020.bsc.es/RVandOpenPOWER

Time Zone Calculations: https://www.timeanddate.com/worldclock/meetingtime.html?day=14&month=6&year=2021&p1=141&p2=236&p3=1234&p4=250&p5=24&p6=224&iv=0

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8:30-9:00 Welcome and MEEP (John Davis?)

Session 1 (Security/Reliability)

9:00 - 10:30

- Opentitan (https://opentitan.org)
  - Dr. Dominic Rizzo, Google
  - CA, USA (-9h, 12am)
- "Open-source ML accelerators and their associated security issues"
  - Prof. Dr. Anupam Chattopadhyay, Nanyang Technological University
  - Singapore (+6h, 3:30pm)
- "Security Vulnerabilities in Modern Power Management for High-Performance Computing Systems"
  - Dr. Jawad Haj-Yahya, ETH Zurich
  - Europe
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Coffee break

Session 2 (HW for HPC)

11:00-13:00

- OpenCAPI in HPC (https://opencapi.org)
  - Mr. Bruno Mesnet; IBM Power System
  - France
- "Contributing to the open RISC-V ISA through novel eProcessor hardware"
  - (Nehir - BSC)
  - Europe
- OpenHW CORE-V Cores Roadmap
  - Davide Schiavone
  - Zurich (Europe)
- Designing and implementing SVP64, adding Cray-style Vectors to OpenPOWER
  - Luke Leighton (LibreSOC)
  - The Hague

- MMA, OMI, Memory inception and Vector Units

- Jose Moreira (IBM Research)
- New York

Lunch break

Session 3 (Simulators/Emulators)

13:45-15:15

- Cavatools
  - Peter Hsu (BSC)
  - Barcelona
- Sail model
  - Alasdair Armstrong (or someone from his group)
  - Cambridge
- Comprehensive life cycle of mixed testing, from HDL to gates
  - Luke Leighton (LibreSOC)
  - The Hague

Coffee break

Session 4 (Toolchain)

15:30-17:00

- HDL layout (ASIC) Layout
  - Jean-Paul from Sorbonne University
  - Paris
- “An analysis of RISC-V code-generation with GCC11 on the SPEC2017 workload”
  - Philipp Tomsich
  - Europe
- OpenRAM (https://openram.soe.ucsc.edu)
  - Matthew Guthaus
  - CA, USA (-9h, 8am)

Session 5 (Panel Discussion)

17:15-18:15

Panelists: Calista (RISC-V), Mandy (IBM) , Mateo (BSC), Arjun (TATA)

Some topic:

- open ISA in HPC?
  - Who is against open ISA in HPC?
  - What are the challenges of open ISA in HPC

    - Top 5 HPC challenges of open ISA (e.g. 5 min each panelist)
    - If you had a billion dollars, what would you do in open ISA and HPC
    - Which open ISA is going to survive?
    - Google SoC for servers (open ISA, Google is Intel based, what does it mean for Intel?, what if Google turns their data centers from Intel to open ISA (how do you make that happen?))
- The future/roadmap of edge-computing in Europe

Moderator: John, Miquel, Osman?

Wrap up

18:30-19:00 John Davis (BSC)