

Parallel Computing Architectures

Test 2

2021. 12. 13.

1. Please describe the SRAM based FPGA programming method (advantages/disadvantages). (2p)
2. Specify and draw the architecture of the FALCON FPGA, which kind of parallelism can be identified in its operation? (3p)
3. Specify the pipeline operations of the CASTLE CNN (basic equations, block diagram) (3p)
4. Draw a Xilinx Virtex 5 FPGA Slice and define the function of each component (3p)
5. Draw the block diagram of an IBM Cell processor! (3p)
6. Specify the Quad Data Rate SRAM (What is it good for? What is the benefit of its usage? How can “quad data rate” be achieved?) (3p)
7. Describe the cache coherence problem through an example. Show a simple solution (Snooping bus) (3p)
8. Give the implicit Euler form (advantages/disadvantages) (3p)
9. Specify the architecture of a GPU, how can you program it, which kind of parallelism you can find here and some limits of applications? (3p)