Summary
Continual Flow Pipelines

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1 To be completed before class

What are the problems solved by this paper? (50 words)

The paper addresses the costs associated with achieving performance by increasing the size of the instruction window, number of registers and commit buffer. Each of the above complicates the logic involved and increases the associated cost in terms of die size and power consumption.

What are the approaches attempted by this paper? (50 words)

CFP proposes to implement a non-blocking pipeline architecture which moves loads causing cache-misses and instructions depending on the loads out into a Slice Processing Unit and thereby freeing the resources consumed by these instructions. The SPU then reintroduces these instructions into the pipeline once the load value returns.

What are the main conclusions of this paper? (50 words)

The paper proposes a non-blocking architecture which reduces the hardware resources required and has better performance than larger ROBs and CPR cores. The CFP can tolerate longer cache latencies and places less restrictions on the size of the cache required.

2 To be completed after class

Did this paper address an important issue? Explain. (100 words)

Are the proposed approaches valid? Describe its strength and weakness. (100 words)

Do the results support the conclusions? Explain. (100 words)

Describe the potential future works? (100 words)