Performance Interfaces for Hardware Accelerators

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Reality: People want to use accelerators, but …

Bob

App workload

I want the app to run faster

Which accelerator will speed up my app and by how much ?
How to know that before purchasing

Agree, I could then compare different accelerators without wasting money

Alice

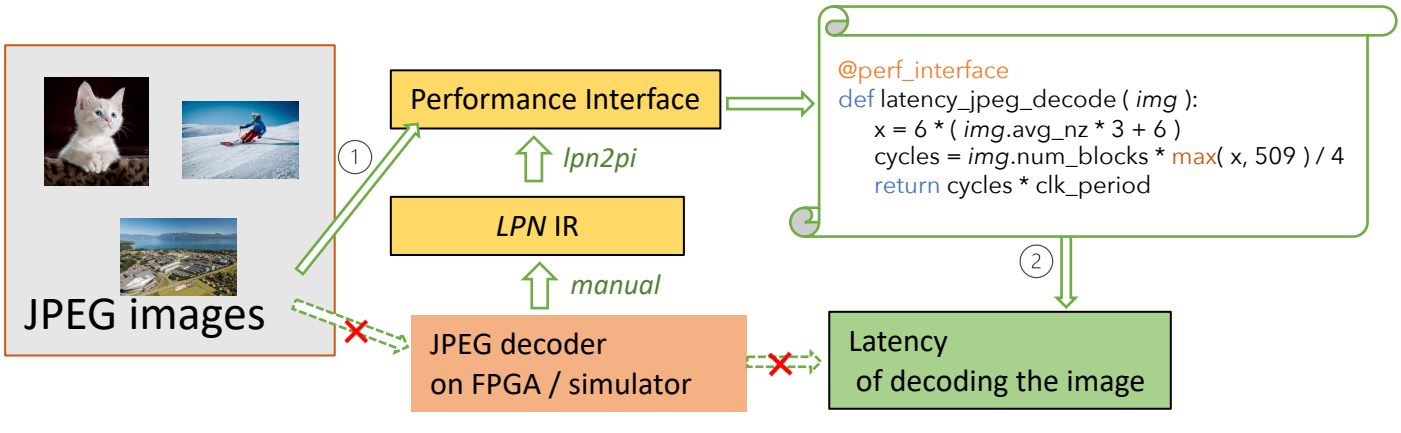
Buy accelerators !

I wish they had simple interfaces to describe performance for different workloads

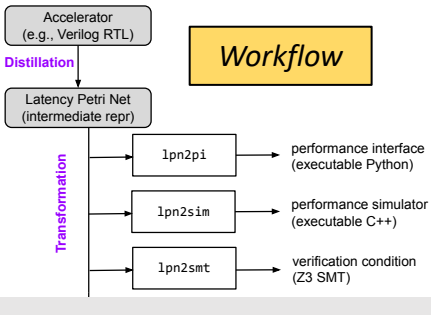
You would then also know when to offload tasks to gain performance

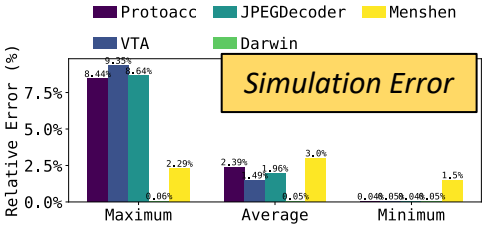
SmartNIC | Graph Processing Accelerator | Protobuf Accelerators | Accelerators through HLS
H264/JPEG Encoder/Decoder Accelerator | ML Accelerators | Accelerator through Bluespec

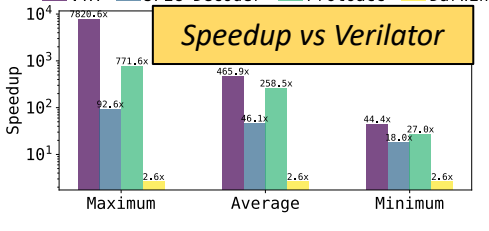
Goal : Human understandable interfaces for accelerators' performance !
(The only alternative to know performance now is profiling)



LPN (Latency Petri Nets) is formal, analyzable, accurate and fast to simulate







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