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Heterogeneous reconstruction: combining an ARM processor with a GPU

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As the mobile ecosystem has demonstrated, ARM processors and GPUs promise to deliver higher compute efficiency with a lower power consumption. One interesting platform to experiment with architectures different from a traditional x86 machine is the NVIDIA AGX Xavier SoC, that pairs a 64-bit ARM processor 8 cores with a Volta-class GPU with 512 CUDA cores. The CMS reconstruction software was ported to run on the ARM architecture, and there is an ongoing effort to rewrite some of the most time-consuming algorithms to leverage NVIDIA GPUs. In this presentation we will explore the challenges of running the CMS reconstruction software on a small embedded device, and compare its compute performance and power consumption with those of a traditional x86 server.

Consider for promotion

Yes

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