

Better than worst-case design for real-time streaming applications

Traditionally hardware systems are designed using worst-case margins. This becomes more expensive (in area, power) with increasing process variation (within-die, die-to-die). We propose to reduce process margins, by reducing traditional manufacturing yield, but at the same time using freedom at the application level to offset this variation. As a result, the number of dies that are guaranteed to be able to execute a real-time application is improved.

Further reading:

- "Better than worst-case design for streaming applications under process variation", Davit Mirzoyan, PhD thesis TU Delft, 2013
- "Throughput analysis and voltage-frequency island partitioning for streaming applications under process variation" Davit Mirzoyan, et al. ESTIMedia, 2013.
- "Process-Variation Aware Mapping of Best-Effort and Real-Time Streaming Applications to MPSoCs" Davit Mirzoyan, et al. TECS, 13(61), January 2014.

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