Hyperthreading and “Almost Amdahl”

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So, if that’s what multicore is about, what is Hyperthreading?

What is Hyperthreading and what can it do?

If we have n hyperthreads, then the final remaining unused capacity is \((1-H)^n\). The capacity actually used in use would then be \(1-(1-H)^n\), if one thread can only keep the CPU H% busy, then the speed-up is potentially:

\[
SU = \frac{1}{1-(1-H)^n}
\]

A Lidar Application: Four Cores with Two Hyperthreads per Core

Expected Speed-up from Hyperthreading

Note that this is upside-down from our usual convention. Sorry. I got this from someone else.