

June 3, 2018

@Championship Value Prediction

ISCA 2018

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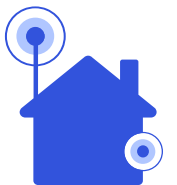
Qualcomm

Speculation: Past, Present and Future

Moderator:

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Our Esteemed Panel



Gurindar S. Sohi
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(DL Architect
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Andreas Moshovos
(Prof. @Toronto)



Daniel Jiménez
(Prof. @Texas A&M)

Topic #1: Speculation is Key

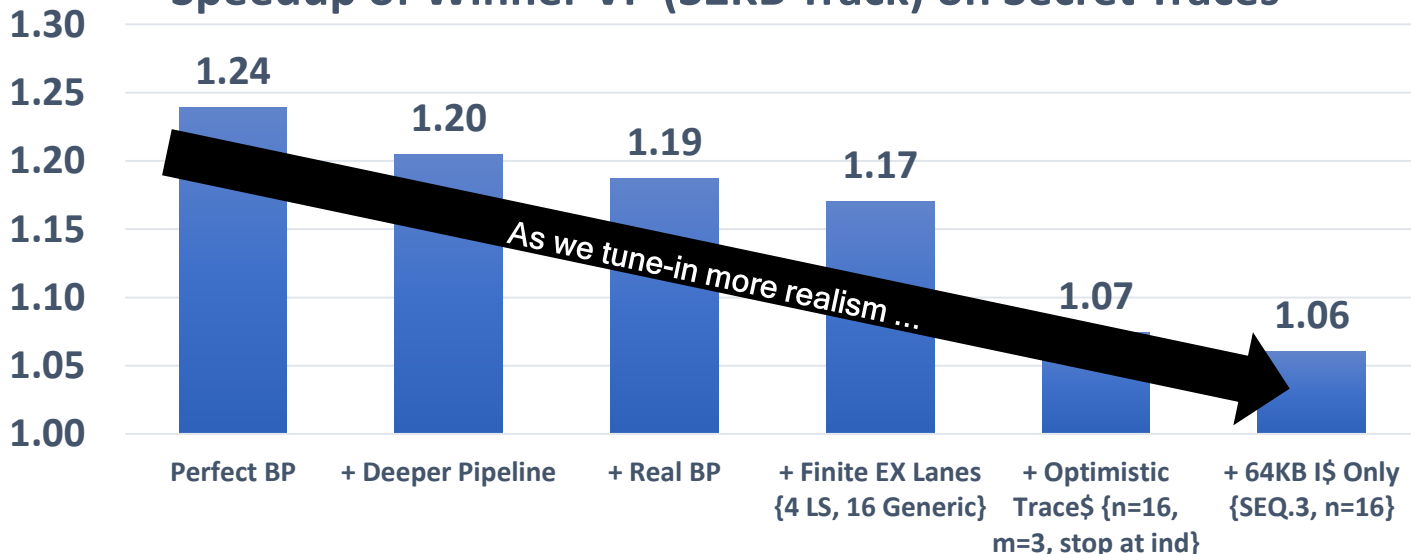
Why do you think that some of the speculation techniques have not been adopted in real designs yet?

PPA, Complexity vs. Reward ...etc.

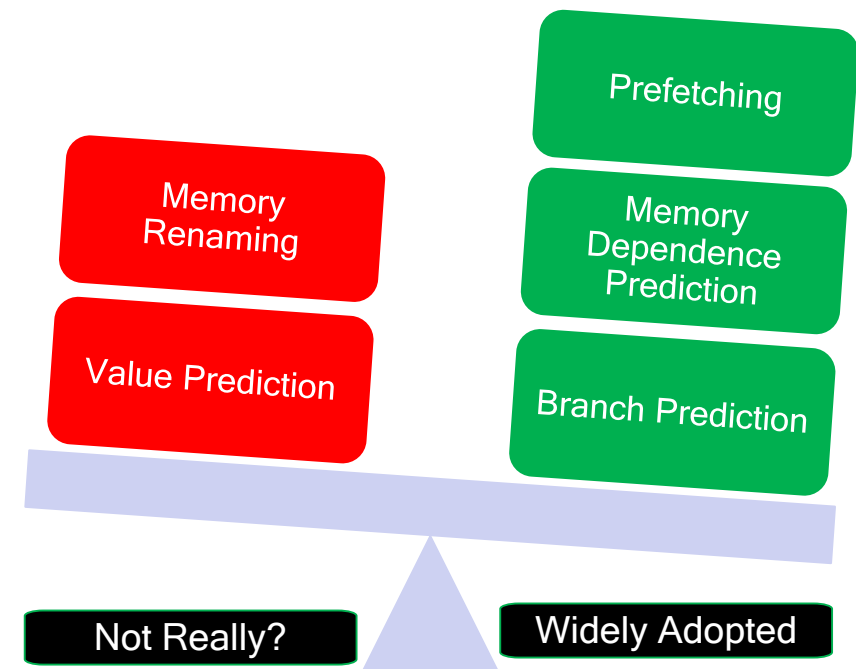
Superspeculative Microarchitecture for Beyond AD 2000

Lipasti and Shen, Journal Computer '97

Speedup of Winner VP (32KB Track) on Secret Traces

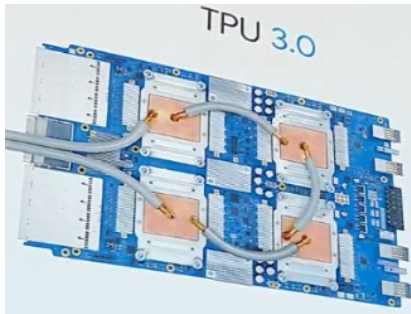


Many thanks to Eric Rotenberg

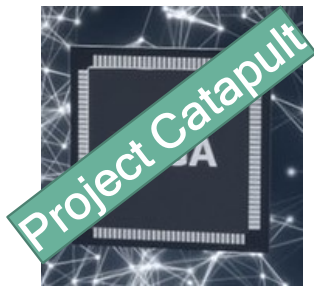


Topic #2: Speculation in Accelerator

Is it just a matter of time until Accelerators adopt aggressive speculation techniques, or is this not likely to ever happen?




TC Amazon and Facebook are both working on their own kind of custom silicon.



Topic #3: Security and Speculation

- Speculation increases the attack surface for malicious actors. Do you see this as a major concern, and will it impede future adoption of speculative techniques?
- How can we prove (or at least improve) the safety of existing and new speculation techniques in future designs?

 **tech** Major chip flaws affect billions of devices




Google and Microsoft disclose new Variant 4 Meltdown, Spectre CPU flaw



A group of security researchers has reportedly discovered 8 new varieties of the Spectre vulnerabilities ...



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