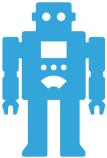




MELTDOWN & SPECTRE FOR NORMAL PEOPLE

SPECTRE: SPECULATIVE EXECUTION





























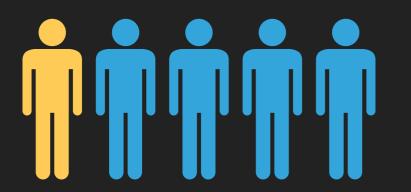
The CPU can improve the coffee machine utilisation by speculatively brewing the coffee for

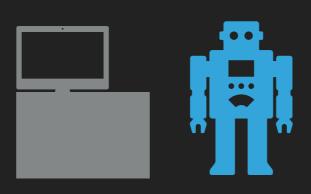
This is very similar to the effect seen in Meltdown.

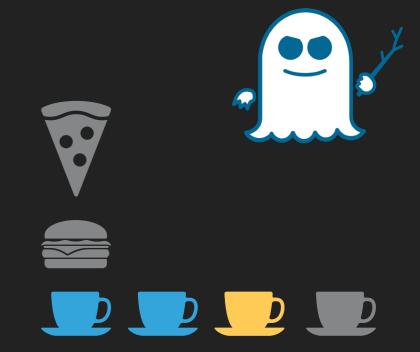
In the **Meltdown** attack the CPU knows the next instruction (order) and asynchronously checks the permissions

In **Spectre** the CPU <u>guesses the next instructions based</u> <u>on heuristics</u> (brew coffee without knowing the order)

SPECTRE: SPECULATIVE EXECUTION







The CPU can improve the coffee machine utilisation by speculatively brewing the coffee for $\frac{1}{1}$

This is very similar to the effect seen in Meltdown.

- In the Meltdown attack the CPU knows the next instruction (order) and asynchronously checks the permissions
- In **Spectre** the CPU <u>guesses the next instructions based</u> <u>on heuristics</u> (brew coffee without knowing the order)

SPECTRE: SPECULATIVE EXECUTION



Counter

