PALMED & GUS: Performance prediction and optimisation through microbenchmarking and abstract resources

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GUS: a complete, dynamic simulator

- Access to runtime information

Similar (static) tools:
- IACA
- LLVM-MCA
Demo!
The Port Model: an industry standard

Intel’s Sunny Cove back-end
(Intel Architecture Day, 2018)

AMD Zen 3 back-end
(AMD official presentation, 2020)

Used in nearly every high-performance processors: x86/ARM
PALMED: Automated reverse-engineering...

Similar tools:
- Exegesis
- Uops.info

BUT

PALMED has:
- No need for performance counters
... and disjunctive abstract resources

- Simpler computation of the throughput (maximum of a sum)
- No need for a schedule
- No need for performance counters
- Can model every exiting (conjunctive) port mapping
Open access to PALMED’s results

Try it by yourself: https://palmed.corse.inria.fr/demo