Gather-Scatter DRAM
In-DRAM Address Translation to Improve the Spatial Locality of Non-unit Strided Accesses

Session C1, Tuesday 10:40 AM

Vivek Seshadri
Thomas Mullins, Amirali Boroumand, Onur Mutlu, Phillip B. Gibbons, Michael A. Kozuch, Todd C. Mowry
Problem: Non-unit strided accesses
Problem: Non-unit strided accesses

Inefficiency: High latency, wasted bandwidth and cache space
Problem: Non-unit strided accesses

Inefficiency: High latency, wasted bandwidth and cache space
Problem: Non-unit strided accesses

Inefficiency: High latency, wasted bandwidth and cache space

Example result: In-memory databases

Best of both row store and column store layouts
Gather-Scatter DRAM
In-DRAM Address Translation to Improve the Spatial Locality of Non-unit Strided Accesses

Session C1, Tuesday 10:40 AM

Vivek Seshadri
Thomas Mullins, Amirali Boroumand, Onur Mutlu,
Phillip B. Gibbons, Michael A. Kozuch, Todd C. Mowry

SAFARI  Carnegie Mellon  intel