Performance and Energy Efficiency Analysis of Join Algorithms on GPUs

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Database on Many-Core systems

- Implementing database operations on parallel platforms improves performance
- GPUs have been proved to speedup database operations
- GPUs as well as CPUs have made efforts to be more energy efficient

GPU Architecture

- Massive cores
- High memory bandwidth
- Hardware optimized for high parallelism tasks and energy efficiency.
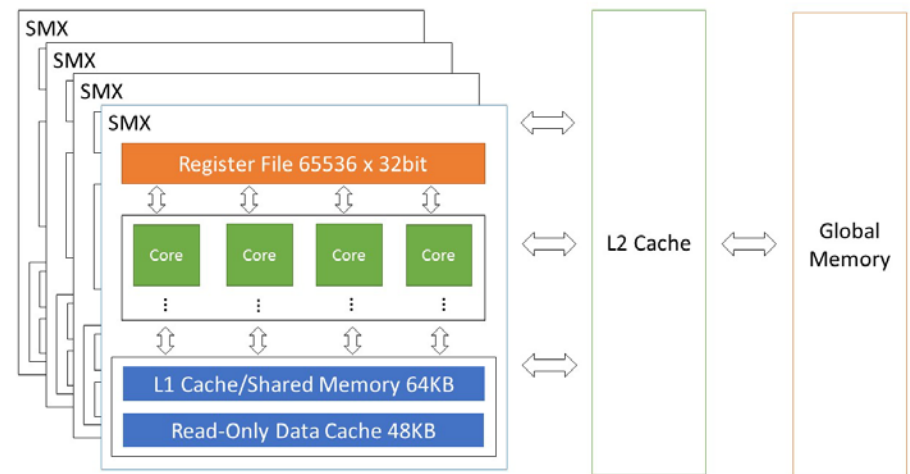
Empirical Result
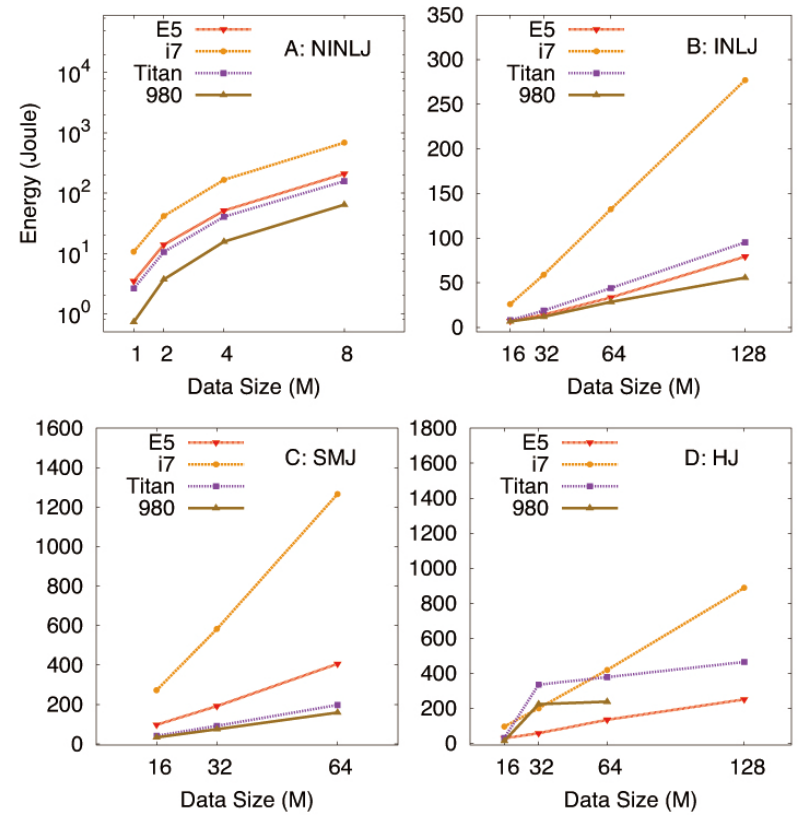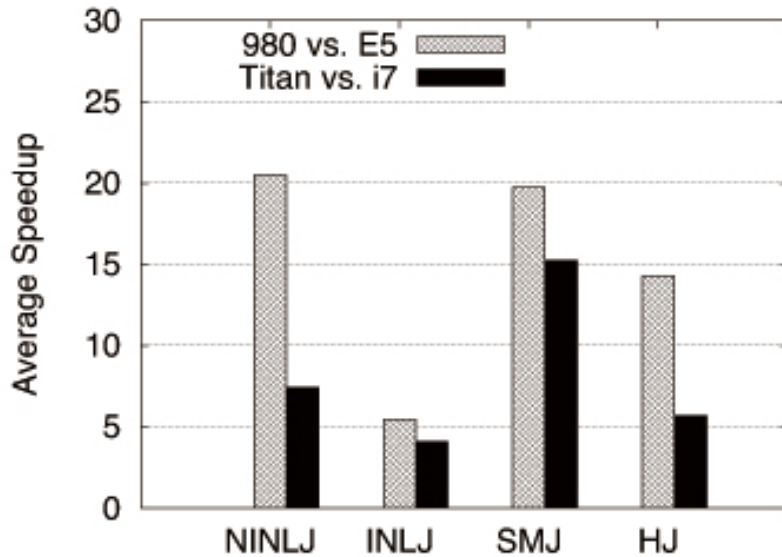
Summary

- GPUs achieve up to 20X speedup in performance compared with CPUs.
- GPUs have done better than CPUs along the way to energy efficiency,
- GPUs might be a promising computing platform as it provides both performance and energy efficiency that are needed for data centers, data warehouses and other enterprise-level and scientific applications.