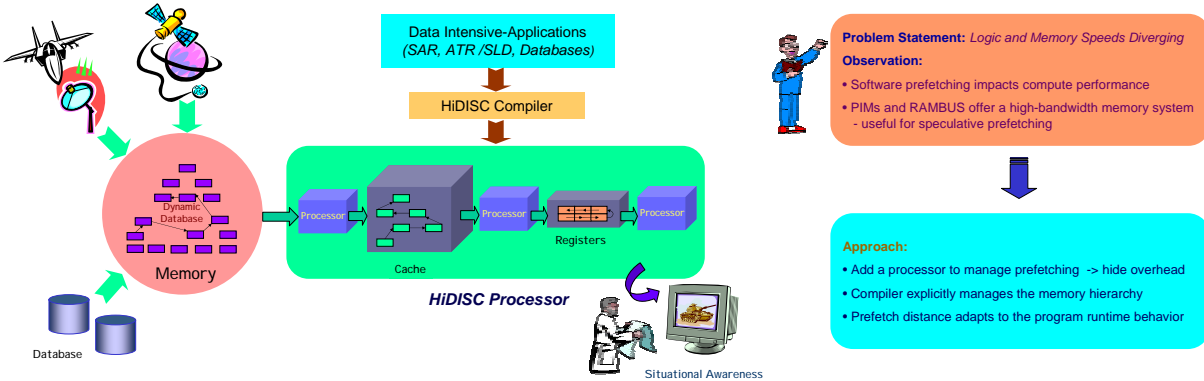


HiDISC: Hierarchical Decoupled Instruction Set Computer

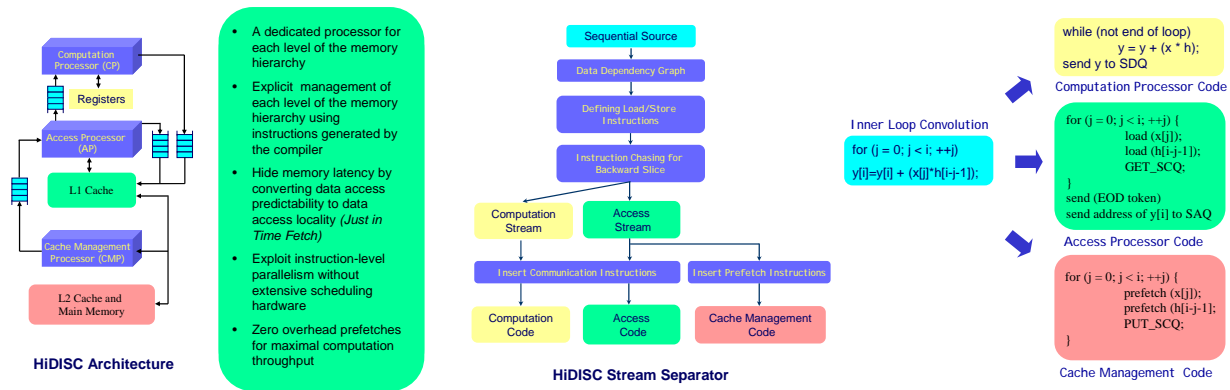
Wonwoo Ro and Prof. Jean-Luc Gaudiot, EECS
The Henry Samueli School of Engineering
University of California, Irvine



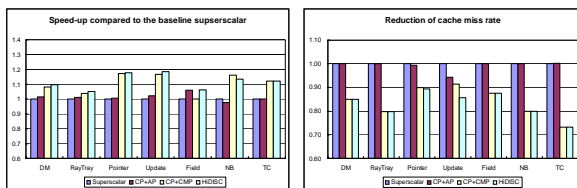
HiDISC for Data-Intensive Applications



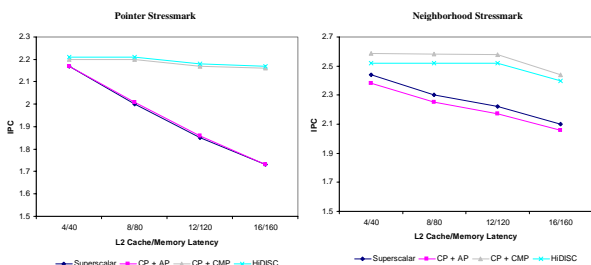
Compiler Driven Memory Hierarchy Management



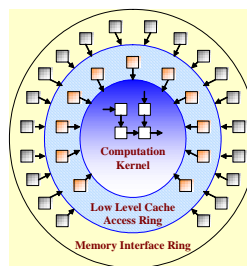
Evaluating HiDISC



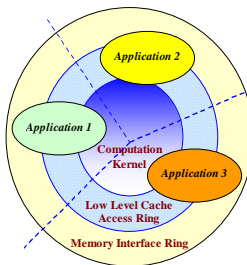
Configuration	Characteristic	Speed-up
CP + AP	Access/Execute Decoupling	1.3%
CP + CMP	Cache Prefetching	10.7%
HiDISC	Decoupling and Prefetching	11.9%



Flexi-DISC System



- Highly dynamic at execution time
- Dynamic reconfigurable central computational kernel (CK)
- Identical processing units for outer rings (LLCAR, MIR)



- Variety of target applications
- Highly efficient dynamic partitioning of the resources and their run-time allocation can be achieved

"General-Purpose HiDISC"