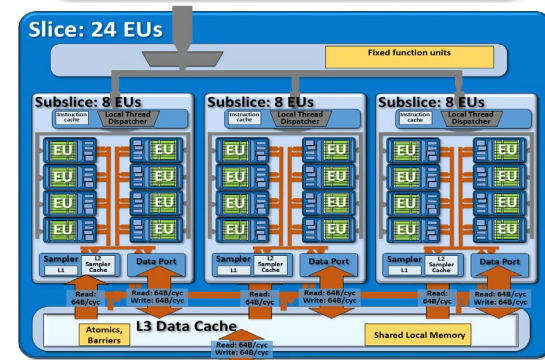
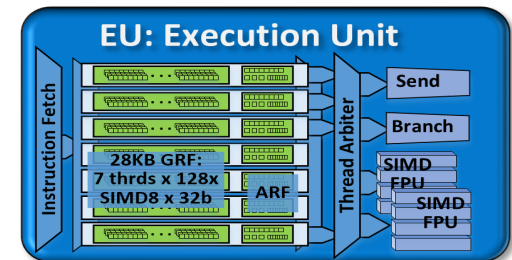
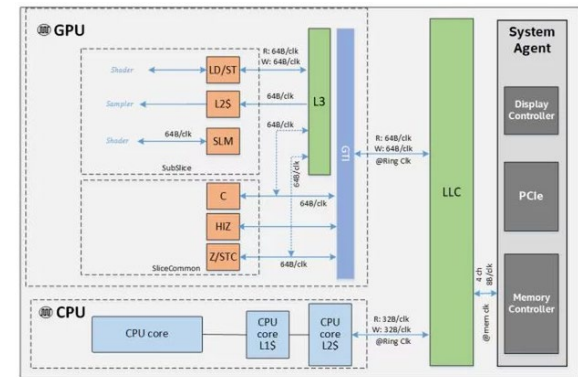


Applied High Performance GPU Computing

- Learn the real-world skills, “black art” techniques, and theory you will need to develop optimal parallelized GPU software.
 - Basic GPU processor & memory architectures, SIMD/SIMT/SPMD
 - GPU kernel design and coding, debugging, profiling, performance analysis, host- and device-side memory and cache optimization
- Basic parallel-GPU algorithms & data structures, parallel design patterns, linear algebra and matrix computations (FFTs, convolutions)
- In-depth case studies of parallel GPU codes:
 - Physically-based rendering/ray-tracing/shading of physics sims
 - Signal, image and video processing
 - Machine learning on GPUs (GPU-MPCNN “ConvNets” Deep Learning)
- Focus on OpenCL 2.x (with Visual Studio and Intel SDK for OpenCL)
- A hands-on, in lab, project-oriented curriculum.
- Class grade based on 4 homeworks, and an in-depth final project.*



C/C++ coding intensive!

