The Future of Computing: Domain-Specific Accelerators

Abstract: Scaling of computing performance enables new applications and greater value from computing. With the end of Moore's Law and Dennard Scaling, continued performance scaling will come primarily from specialization. Graphics processing units are an ideal platform on which to build domain-specific accelerators. They provide very efficient, high performance communication and memory subsystems - which are needed by all domains. Specialization is provided via "cores", such as tensor cores or ray-tracing cores that accelerate specific applications. This talk will describe some common characteristics of domain-specific accelerators via case studies.