

# Programming heterogeneous architecture with libraries: a survey of NVIDIA linear algebra libraries

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## Abstract

Accelerating sparse linear algebra on the latest GPU architectures has real potential for performance gains of hundreds of percent over tuned multi-core CPU-only implementations, but at what cost in complexity? This talk will address the programming approaches needed to utilize GPUs for today's most challenging problems through library usage.

François Courteille is a principal solution architect with NVIDIA, helping customers and partners develop accelerated High Performance Computing and Machine Learning solutions (hardware & software architecture). He is particularly focused on HPC applications of energy industry, mostly Oil & Gas. Prior to joining NVIDIA, François spent three decades as technical leader for HPC companies, Control Data Corporation, Evans & Sutherland, Convex, NEC Corporation, where he ported and tuned HPC application software on large scale parallel and vector systems. He has a MS degree in Computer Science from Institut National des Sciences Appliquées (INSA) de Lyon, France.