



INTEL® CODE MODERNIZATION WORKSHOP 2016

SOFTWARE DEVELOPMENT FOR HIGH PERFORMANCE COMPUTING & MACHINE LEARNING

More information and registration: <http://www.inteldevconference.com>

AGENDA

08:30	09:30	Registration and Breakfast
09:30	09:40	Welcome
09:40	10:25	DELIVERING LEADING PERFORMANCE IN COMPUTING, ANALYTICS AND MACHINE LEARNING – ALL ABOUT INTEL® XEON™ & XEON PHI™ Learn about the parallel architecture, technical advances and features of the latest and future Intel processors, especially Intel® Xeon™ and Intel® Xeon Phi™ (aka Knights Landing, KNL). Presenter: Janko Strassburg, Bayncore
10:25	11:10	CASE STUDY – SOLVING THE N-BODY PROBLEM ON INTEL® XEON PHI™ (KNL) Porting and optimizing of an n-body algorithm to the newest generation of Intel® Xeon Phi™ processors. Tuning techniques such as scalar optimizations, vectorization with structures of arrays and memory optimizations will be explained and their effect demonstrated. Presenter: Roger Philp, Bayncore
11:10	11:30	Coffee Break
11:30	12:15	CODING HIGH PERFORMANCE PYTHON* FOR DATA-INTENSIVE ALGORITHMS This talk will introduce the recently released Intel® Distribution for Python which delivers high performance acceleration for scientific computing, data analytics, and machine learning. Learn how NumPy/SciPy can now leverage the full performance potential of parallel CPU architecture by linking performance libraries like Intel® MKL (Math Kernel Library) and Intel® TBB (Threading Building Blocks). Presenter: Edmund Preiss, Intel
12:15	13:00	CASE STUDY – STENCIL CODE OPTIMIZATION ON INTEL® XEON PHI™ (KNL) We will demonstrate an optimization process of a 3D stencil code representing the diffusion of a solute in a solvent. The considerable impact on performance of the high bandwidth memory on-board the Intel® Xeon Phi™ processor will be shown. Results are analysed and validated using Intel® VTune Amplifier. Presenter: Janko Strassburg, Bayncore
13:00	14:00	Lunch
14:00	14:30	WHAT'S NEW IN INTEL PARALLEL STUDIO XE 2017? Learn about the products and some of the new features of Intel Parallel Studio XE 2017. We'll also take a look at some upcoming technologies, such as the roofline model support in Advisor. Presenter: Janko Strassburg, Bayncore
14:30	15:15	ENABLING MACHINE LEARNING ON INTEL ARCHITECTURE In this session we'll cover the overall technical ecosystem for machine learning (ML) / deep learning (DL) and how it is enabled by Intel software solutions. From popular open frameworks like Caffe or Theano, newly optimized for Intel, to advanced math libraries like Intel® Data Analytics Acceleration Library (Intel® DAAL) or Intel® Math Kernel Library (Intel® MKL) to cutting-edge SDKs, we'll demonstrate how to enable the highest performance for ML/DL code on Intel's highly parallel CPUs. Presenter: Ralph de Wargny, Intel
15:15	15:45	Coffee Break
15:45	16:30	PREPARING FOR THE LATEST GENERATION OF INTEL ARCHITECTURE BEFORE HAVING ACCESS TO HARDWARE In this session we'll show how to prepare for the latest generation of Intel architecture before you have access to the real hardware. We will give practical examples of how to prepare for the Intel® Xeon Phi™ Knights Landing to make sure that your code is 'KNL ready' using the Intel Software Development Emulator (SDE) and Advisor. Presenter: Janko Strassburg, Bayncore
16:30	17:15	TUTORIAL - PROFILING AND IMPROVING ADVANCED VECTORIZED CODE Using the latest enhancements to Intel Vectorization Advisor, this session shows how to detect vectorisation issues and strategies to overcome them. Included in this session is a practical hands-on example using DL_MESO Lattice Boltzmann code from Daresbury Labs. Presenter: Roger Philp, Bayncore
17:15	17:30	Q&A



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