

# Programming GPUs with CUDA

## 3-days course at University of Calabria

June, 9<sup>th</sup>-11<sup>th</sup>, 2015. Department of Mathematics and Computer Science.

Room: MT11 (Cubo 30B – 2° piano). Contact person: William Spataro ([spataro@unical.it](mailto:spataro@unical.it)).

Lecturer: Manuel Ujaldon. Nvidia CUDA Fellow.

Target audience: Researchers/students with basic knowledge of parallelism and C programming.

### June, 9<sup>th</sup>:

15:30 - 16:50 The GPU hardware: Many-core developments.

16:50 - 17:10 Coffee break.

17:10 - 18:30 CUDA Programming: Threads, blocks, kernels, grids.

### June, 10<sup>th</sup>:

15:30 - 16:50 CUDA Tools: Compiling, debugging, profiling, occupancy calculator.

16:50 - 17:10 Coffee break.

17:10 - 18:30 CUDA Examples: VectorAdd, Stencils, ReverseArray, MatrixMultiply.

### June, 11<sup>th</sup>:

15:30 - 16:50 Inside Kepler & Maxwell: Hyper-Q, dynamic parallelism, unified memory.

16:50 - 17:10 Coffee break.

17:10 - 18:30 Hands-on: Programming GPUs in the cloud using Amazon EC2 services.

