AVX-512: new opportunities and challenges for compilers and programmers

THE INTEL @ TECHNION LECTURE SERIES

Ayal Zaks
Wednesday, 6th January 2016
11:30 Room 337 CS Building

The next generation of Intel’s multicore and many-core product lines will use AVX-512, the biggest extension to Intel Instruction Set Architecture (ISA). This extension will provide new HW capabilities, yet poses a critical challenge for SW – how can modern compilers and programmers make efficient use of these new capabilities? This talk will discuss recent research and development advancements in coping with this challenge, in terms of innovative compilation technology, programming models, and the interaction between the two.

Ayal Zaks joined Intel's Software & Services Group in Haifa late in 2011 where he manages a compiler development team. Prior to that Ayal spent 15 years at the IBM Haifa Research Laboratory where he worked on compiler optimizations and managed its compiler technologies group. In parallel, Ayal has been active academically, working with research students, serving on program committees, publishing nearly fifty papers and co-organizing international workshops. He received B.Sc., M.Sc., and Ph.D. degrees in Mathematics and Operations Research from Tel Aviv University, and is an adjunct lecturer on Compilation at the Technion. In recent years, he is a parental fan of FIRST robotics competitions.