UNIVERSIDAD COMPLUTENSE MADRID

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A Glass Half Full: Using Programmable Hardware Accelerators in Analytical Databases

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Entrada libre hasta completar el aforo

Resumen:

Even though there have been a large number of proposals to accelerate databases using specialized hardware, often the opinion of the community is pessimistic: the performance and energy efficiency benefits of specialization are seen to be outweighed by the limitations of the proposed solutions and the additional complexity of including specialized hardware, such as field programmable gate arrays (FPGAs), in servers. Recently, however, as an effect of stagnating CPU performance, server architectures started to incorporate various programmable hardware and the availability of such components brings opportunities to databases. In the light of a shifting hardware landscape and emerging analytics workloads, it is time to revisit our stance on hardware acceleration. In this talk we highlight several challenges that have traditionally hindered the deployment of hardware acceleration in databases and explain how they have been alleviated or removed altogether by recent research results and the changing hardware landscape. We also highlight a new set of questions that emerge around deep integration of heterogeneous programmable hardware in tomorrow's databases.

Sobre Zsolt Istvan:

Zsolt Istvan is an Assistant Research Professor at the IMDEA Software Institute in Madrid, Spain. Earlier, he earned his PhD in the Systems Group at ETH Zurich, Switzerland, working with FPGAs and distributed storage. In his research, he explores ideas around specialization as a way of lifting bottlenecks in distributed systems and databases.