DISSERTATION DEFENSE

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Rescuing Data Center Processors

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10:00am – 12:00pm
3725 Beyster
Hybrid – Zoom

ABSTRACT: Billions of people rely on web services powered by data centers, where critical applications run 24/7. Unfortunately, data center applications are extremely inefficient, wasting more than 60% of all processor cycles, and causing millions of dollars in operational expenses and energy costs. In this talk, I will present an overview of my vision to overcome this inefficiency using hardware/software co-design. In particular, I will focus on (1) systems interfaces using which software can reason about hardware inefficiencies; and (2) architectural abstractions using which software can avoid hardware inefficiencies.
Finally, I will conclude by describing my ongoing and future research on democratizing hardware/software co-design to enable efficiency across the systems stack.

CHAIR: Prof. Baris Kasikci