



Electrical and Electronics Engineering Bilkent University

Lecture Series 2: Cloud Foundations: Emerging Programming Models and Runtimes

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Research Center**

Date/Time: Tuesday, August 17, 2017, @ 10:30am-11.59am,
Place: EE-317

ABSTRACT: We are seeing an accelerating growth in cloud platforms, runtimes and programming models. Cloud discussion has shifted from utility and density to cloud-native services and design patterns. Emerging development, continuous integration and delivery techniques redefine how cloud applications are built with agility, quality and control. New cloud programming models raise the levels of compute abstraction to functions and high-level triggers.

In this talk I will present an overview of the emerging design patterns, programming models and the evolution of runtimes for cloud-native applications. We will continue from where we left off, containers and orchestration, and will discuss the design and delivery principles of cloud-native applications, focusing on DevOps and microservices. I will then present an overview of the emerging serverless computing model and its applications. I will highlight our current research activities and open-source innovations that both make use of these principles, as well as advance the state of the art in the field. I will conclude with some of the open problems and the opportunities to contribute.

Bio: Dr. Canturk Isci is a Research Manager and Master Inventor in IBM TJ Watson Research Center, Yorktown, US, where he leads the Cloud Monitoring, Operational and Security Analytics team. He currently works on deep introspection based monitoring techniques for cloud, and their application to novel operational, security and DevOps analytics. He is the technical lead for IBM Vulnerability Advisor for Containers and for Agentless System Crawler.

His research interests include operational visibility, analytics and security in cloud, virtualization, energy-efficient and adaptive computing. Prior to IBM Research, Dr. Isci was a Senior Member of Technical Staff at VMware, where he worked on distributed resource and power management. He has 50 academic papers and 30 issued or pending patents. Dr. Isci has a B.S. from Bilkent University, an M.Sc. with Distinction from University of Westminster, UK and a Ph.D. from Princeton University, US.