پژوهشکده علوم کامپیوتر
پژوهشگاه دانشهای بنیادی

کارگاه آموزشی یک روزه

Emerging Models and Technologies of Computing

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ABSTRACT

CMOS technology has been the major drive for the exponential growth of electronic systems, also known as Moore's law, for many years. However, many serious challenges are facing this trend due to fundamental physical limits of CMOS technology such as ultra-thin gate oxides, short channel effects, doping fluctuations across the chip and increasingly difficult and expensive lithography. Emerging nanotechnologies, such as carbon nanotubes, single electron transistors, and quantum-dots cellular automata promise to supersede CMOS technology in future.

This tutorial covers some of these emerging nanotechnologies from device, circuit, architecture, and design perspectives. The main focus of this tutorial will be on design automation and robustness (testing, defect tolerance and fault tolerance) of systems built using such nanoscale devices.

برنامه کارگاه

عنوان جلسه	ساعت
Introduction: CMOS challenges and transition to nanotechnologies	9:00-9:30
Quantum-dots Cellular Automata (QCA): Devices, circuits, and architectures	9:30-10:30
Molecular Crossbar Arrays: Devices, circuits, and architectures	11:00-12:00
Robust System Design: Introduction and challenges at nanoscale	13:30-14:30
Test and reliability issues in QCA	14:30-15:30

زمان: سه شنبه ۱۴ شهریور ۱۳۸۵

مکان: میدان نیاوران- پژوهشگاه دانشهای بنیادی- پژوهشکده علوم کامپیوتر.

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