



CECS

CENTER FOR EMBEDDED & CYBER-PHYSICAL SYSTEMS
UNIVERSITY OF CALIFORNIA · IRVINE

CECS Seminar



“Modeling, Analysis, Simulation, and Optimization. The Bedrock of Engineering”

Dr. Sani Nassif

CEO at Radyalis

Friday, January 26th

2:00-3:00 p.m.

Location: EH 2430

Abstract: VLSI, Circuit Design, Technology Scaling, Moore’s Law, EDA. They are our own highly specialized areas of expertise, and it often feels like our discipline is quite different from other fields in engineering. Indeed, the many decades of exponential growth are unique to our field and have presented numerous challenges that were met by researchers in this area with clever solutions. But at the core of our work, we find four steps that we take over and over again. We observe phenomena, make physical or empirical models for them, analyze their behavior as it impacts our goals, create mathematical models that we can use to simulate and predict the behaviors, and finally apply optimization or improvement techniques to create the best possible outcome. These four activities are universal across engineering practice, and it is useful to reflect on how our own tricks and techniques -many innovated in response to the severe scaling challenges the community has had to go through, are good lessons to apply in other fields of engineering or even in medicine.

Biography: Sani received his PhD from Carnegie-Mellon university in the eighties. He worked for ten years at Bell Laboratories on various aspects of design and technology coupling. He then joined IBM Research where he was for eighteen years working on DFM in various technical and management roles. In 2014 he formed Radyalis to apply EDA techniques to Cancer Radiation Therapy. Sani is a fellow of the IEEE, a member of the IBM Academy of Technology, and an IBM master inventor with 70+ patents. He was the president of IEEE CEDA in 2014-2016, and has published and presented widely.

Hosted By: Prof. Fadi Kurdahi