



INVITACION CHARLA

Jueves 24 de Noviembre – 14:00 hrs. Sala C-200 Construcción Civil

“Go Big or Go Home: The First Transatlantic Telegraph Cable and the Birth of Electrical Engineering”

Tom Lee

Abstract

Electrical engineers are the children of a failure so traumatic that we don't even talk about it. American paper magnate Cyrus West Field wanted to span the Atlantic in the 1850s with a telegraph cable; it was the Victorian era's equivalent of shooting for the moon. Amplifiers would not exist for another half-century, so success would require mastery of a number of complex technical disciplines. Regrettably, the project's technical head was a medical doctor. A British board of inquiry convened to assess the resulting failures noted that the electrical arts lacked even a basic vocabulary to describe the failure. William Thomson was eventually named the new head of the project, and final success followed in 1866. The volt, ohm and ampere were formally defined shortly thereafter and the profession of electrical engineering was born. Thomson -- arguably the first professional electrical engineer -- became Lord Kelvin, and EEs have been busy making mischief ever since.

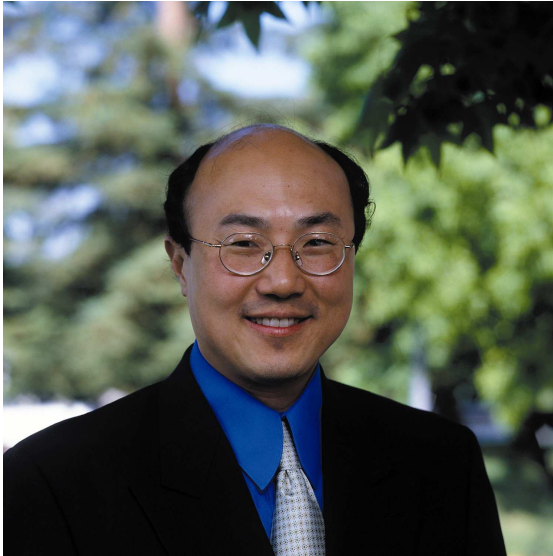
Viernes 25 de Noviembre – 15:30 hrs. Sala NT-201 Sodexo Matemáticas 2° piso

“Dark Secrets from the World of Instrumentation”

Tom Lee

Abstract

Engineers rely on instruments to tell them what their circuits are doing. That means that the instruments have to exhibit better performance than the devices under test. Instrumentation engineers thus have the supremely difficult task of providing tomorrow's performance using today's technology. That pressure has stimulated tremendous creativity, not all of which is appreciated widely, if at all. This talk will examine the circuits of a few iconic products, including HP's 200A Wien-bridge oscillator (and Hewlett's design error), the 100MHz Tektronix 465 oscilloscope, and the 1GHz Tektronix 7104 oscilloscope (the fastest purely-analog oscilloscope ever put into volume production). If there is interest (and if time permits), other instruments and their circuit tricks will be presented as well.



** Bio: Thomas Lee received his degrees from MIT, where his 1989 thesis described the world's first CMOS radio. He has been at Stanford University since 1994, having previously worked at ADI, Rambus and other companies. He's helped design PLLs for several microprocessors (notably AMD's K6-K7-K8 and DEC's StrongARM), and has founded or cofounded several companies, including the first 3D memory company, Matrix Semiconductor (acquired by Sandisk), and IoE companies ZeroG Wireless (acquired by Microchip) and Ayla Networks. He is an IEEE and Packard Foundation Fellow, has won "Best Paper" awards at CICC and ISSCC, was awarded the 2011 Ho-Am Prize in Engineering, as well as an honorary doctorate from the University of Waterloo. He is a member of the board of Xilinx, served as Director of DARPA's Microsystems Technology Office, holds ~70 patents, and has written several textbooks. He owns 100-200 oscilloscopes, thousands of vacuum tubes, and kilograms of obsolete semiconductors. No one, including himself, quite knows why.

Consultas: Mary Troncoso N. mary@ing.puc.cl
Evelyn Flores evelyn.flores@ing.puc.cl