

SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
COLLEGE OF DESIGN AND ENGINEERING

Website: <https://cde.nus.edu.sg/ece>

Area: Integrated Circuits & Embedded Systems

Host: Professor Alioto, Massimo Bruno

TOPIC	:	The Continuous-Time Pipeline: Where Filtering Meets Analog-to-Digital Conversion
SPEAKER	:	Professor Shanthi Pavan NT Alexander Chair Professor of Electrical Engineering, IIT Madras
DATE	:	Wednesday, 11 Dec 2024
TIME	:	4.00PM to 5.00PM
VENUE	:	Block E1 Level 6; E1-06-05 College of Design and Engineering, National University of Singapore

ABSTRACT

As common wisdom and practice in silicon chips dealing with physical signals, an anti-alias filter must precede an analog-to-digital converter (ADC). And indeed, over the last four decades, extensive research efforts have been dedicated to the optimization of filters and ADCs for enhanced power efficiency, albeit treated as separate entities.

This talk will give the intuition behind the continuous-time pipelined ADC, where anti-alias filtering is seamlessly integrated with analog-to-digital conversion. Such integration results in significant advancements in signal-chain efficiency, often yielding order-of-magnitude improvements in power dissipation.

BIOGRAPHY



Shanthi Pavan received the D.Sc. degree from Columbia University, New York, NY, USA, in 1999. Since July 2002, he has been with IIT Madras, where he is currently the NT Alexander Institute Chair Professor of Electrical Engineering. Prof. Pavan is the author of *Understanding Delta-Sigma Data Converters* (second edition, with Richard Schreier and Gabor Temes), which received the Wiley-IEEE Press Professional Book Award for the year 2020. His research interests are in the areas of high-speed analog circuit design and signal processing. Dr. Pavan is a fellow of the Indian National Academy of Engineering, and the Indian National Science Academy, and the recipient of several awards, including the IEEE Circuits and Systems Society Darlington Best Paper Award in 2009. He has served as the Editor-in-Chief of the *IEEE Transactions on Circuits and Systems—I: Regular Papers* and on the Technical Program Committee of the International Solid-State Circuits Conference (ISSCC). He has served as a Distinguished Lecturer of the IEEE Circuits and Systems Society and is a two-term Distinguished Lecturer of the Solid-State Circuits Society. He currently serves as the Vice-President of Publications of the IEEE Solid-State Circuits. He is an IEEE Fellow.

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