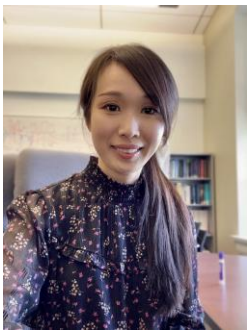
IEEE Orange County Solid-State Circuits Society (SSCS) Present:

AI-Enhanced RF/Mixed-Signal Circuits for Reliable Operations

Dr. Vanessa Chen, Associate Professor, Carnegie Mellon University & Distinguished Lecturer, IEEE Solid-State Circuits Society

Day:	Wednesday, July 30, 2025	
Time:	Registration & Networking	6:00 PM – 6:30 PM
	Presentation	6:30 PM – 8:00 PM
	Q&A and Networking	8:00 PM – 8:15 PM
Fee:	Free for all the IEEE & SSCS members, students, engineers in transition, technologists, as well as those who are exploring to join IEEE & SSCS in the future.	
Free Online RSVP:	**https://events.vtools.ieee.org/tego_/event/manage/484615**	
Address:	Custom Silicon Solutions (CSS), 18021 Cowan, Irvine, CA 92614, USA.	
Parking:	Free Parking available in the permitted & unmarked spaces.	

Abstracts: AI-driven design and optimization are revolutionizing RF and mixed-signal circuits for operation in extreme environments, including high radiation and wide temperature ranges. This talk explores the use of reinforcement learning (RL) and generative models to improve circuit robustness and adaptability. RL-based self-healing techniques leverage embedded electromagnetic sensors for real-time monitoring and dynamic fault recovery, while generative models accelerate design space exploration, enabling resilient and efficient circuit topologies. The presentation will highlight AI-enhanced designs such as adaptive power amplifiers, PMICs, and multispectral sensors that enhance performance and reliability in harsh environments.



Biography: Vanessa Chen earned her Ph.D. in electrical and computer engineering from Carnegie Mellon University in 2013. Before joining Carnegie Mellon University, she was affiliated with The Ohio State University. During her doctoral studies at Carnegie Mellon from 2010 to 2013, she conducted research on algorithm-assisted approaches for improving energy efficiency and ultra-high-speed ADCs with on-chip real-time calibration, and interned at IBM T. J. Watson Research Center in 2012. Prior to academia, she held positions as a circuit designer at Qualcomm in San Diego and Realtek, Hsinchu, Taiwan, focusing on self-healing RF/Mixed-signal circuits. Her research focuses on AI-enhanced circuits and systems, which include intelligent sensory interfaces, RF/mixed-signal hardware security, and ubiquitous sensing and computing systems. Dr. Chen has received the NSF CAREER Award in 2019. She has been involved in various technical program committees, including ISSCC, VLSI, CICC, A-SSCC, and DAC. She also has served as an Associate Editor for several IEEE journals, including TCAS-I, TBioCAS, and OJCAS. Additionally, she has contributed as a Guest Editor for TCAS-II and ACM JETC. She is currently an IEEE SSCS Distinguished Lecturer in 2025/2026.

SPECIAL THANKS TO

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Send questions to Farhad Mafie, IEEE-OC SSCS Chairman: FarhadMISC@Gmail.com

Space is limited, please RSVP.

Please share this flyer with your network and help us to expand the IEEE SSCS activities in Orange County. Thank YOU!