DEPARTMENT OF ELECTRICAL & COMPUTER ENGINEERING

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ECE Distinguished Lecture Series

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Memristive Devices for Neuromorphic Computing

Thursday, January 27th, 1:00pm-2:00pm

Zoom Link: https://gwu-edu.zoom.us/j/92725748178

Abstract:
Memristive devices have become a promising candidate to enable efficient computing for the big data and IoT era. Such computing can be implemented on a Resistive Neural Network with memristive synapses and neurons or a Capacitive Neural Network with memcapacitive synapses and neurons. I will first briefly introduce the promises and challenges of memristive devices for such applications and then present experimental demonstrations of neuromorphic computing with different levels of bio-inspiration.

Biography:
J. Joshua Yang is a professor of the Department of Electrical and Computer Engineering at the University of Southern California. He was a professor of the ECE department at the University of Massachusetts Amherst between 2015 and 2020. He spent about 8 years at HP Labs between 2007 and 2015, leading the emerging devices team for memory and computing. His current research interest is Post-CMOS hardware for neuromorphic computing, machine learning and artificial intelligence, where he published several pioneering papers and holds 118 granted and about 60 pending US Patents. He is the Founder Chair of the IEEE Neuromorphic Computing Technical Committee, a recipient of the Powell Faculty Research Award and a recipient of UMass distinguished faculty lecturer and UMass Chancellor's Medal, the highest honor of UMass. He is a Clarivate™ Highly Cited Researcher in the field of Cross-Field and serves on the Advisory Boards of a number of prime international journals and conferences. He obtained his Ph. D degree in the Materials Science Program of the University of Wisconsin - Madison in 2007 and was elected to IEEE Fellow in 2022 for contributions in resistive switching materials and devices for memory and neuromorphic computing.