Iman Kundu, Optalysys Ltd

Processing Acceleration using Optical Fourier Transform

Abstract: **We present a novel approach in optical processing by accelerating Fourier transform through integration of silicon photonics and free-space optics. We introduce Fourier transform based multiply and accumulate operations, that require less number of operations compared to the traditional multiply and accumulate operations used in computer architecture. The significant reduction in the number of operations, predicts the ETile to be a universal accelerator for any AI/big data hardware.**

Speaker Biography: Iman Kundu received the B.Tech degree in electronics and communication engineering from the West Bengal University of Technology, Kolkata, India, in 2007, and the M.Sc (ENG.) degree in nanotechnology and advanced electronic devices and the Ph.D. degree in electronic and electrical engineering from the University of Leeds, Leeds, U.K., in 2010 and 2014, respectively. From 2008-2009, he was an assistant systems engineer with the Tata Consultancy Services, India, working on software development. From 2014-2019, he has been a Post-Doctoral Research Fellow with the University of Leeds, UK. Since 2019, he is the Photonics Scientist at Optalysys Ltd. His research interest includes the development of photonic integrated circuits for different wavelengths from far-infrared to near-infrared, ultrafast laser dynamics, laser feedback interferometry, fabrication of micro- and nano-structures on far-infrared laser waveguides, Fourier optics, and development of optical accelerators for AI.