



Welcome to the SPS Seasonal School on Signal Processing and Communication Systems for 5G. The jointly, internationally, organized by IEEE Vizag Bay Section Communications Society & SPS Joint Chapter, Vizag, India, IEEE Long Island Section SPS Chapter, New York, USA, and IEEE Finland SP/CAS Chapter, Finland presents the following Distinguished Lecture:

**Building low latency and low power SmartCity Applications  
Thursday September 16<sup>th</sup> 2021 at 8AM-12PM Pacific**

**Abstract:**

Computer vision and machine learning technology have advanced considerably in the past few years and are now being fused together to create a Smarter World of solutions that will soon improve our lives. For example, collectively retail stores lose billions of dollars annually, the National Retail Federation estimates that it was up to \$60B in 2019. From Smart Cities to Factories, Hospitals and Buildings, our world is experiencing an explosion of computational power being applied to real-time video analytics. Imagine a missing child is spotted by a SmartCity application and returned to their parents. In a hospital setting, the application monitoring the cameras in patient's room alerts the staff to a critical situation minutes or even seconds earlier. However, the entire end-to-end pipeline needs to be built for supporting low latency and low power for the edge where Smart city applications reside. Wireless 5G networks provide the fabric on which the video and AI/ML-driven computations and results travel. With latency targets for these smart technologies in the 10s of milliseconds, no other broadband network is up to the task. ML and video, combined with 5G, are making the Smart City solution deployable and more cost effective. In this presentation, we will discuss what technologies are available to build the optimal Smart City solutions and what the differences are.

**Technical Lecturer:**



**Dr. Seong Hwan Kim** is a Sr. Director at Xilinx and leading datacenter systems architecture team. His key focus areas include accelerating workloads in Datacenter Compute, Network, and Storage platforms, defining solutions utilizing various Xilinx FPGA platforms. His recent acceleration objectives are

creating clear value propositions for Smart World applications utilizing Xilinx ML inference and video transcoding technologies. In addition to this Smart World application acceleration, database acceleration, computational storage, HPC, Fintech, and smart NIC are other focus areas. Prior to his current role, he served as a system architect at AMD, LSI/Agere and Lucent Technologies. He has more than 25 years of industry and research experience in the field of networking and datacenter computing. He holds a Ph.D. degree in Electrical Engineering from the State University of New York at Stony Brook and an M.B.A from Lehigh University. He has 12 patents and more than numerous conference and journal papers.

**Logistics:**

**When:** The 16<sup>th</sup> of September 2021 @ 8am—12pm PST

**Where:** Virtual Meeting

**Registration Fees:**

Free for all registered participants

**Registration:** <https://attend.ieee.org/sps-ss/>

**Technical Lecture Coordinators:**

**Dr. Murthy**, Chair of IEEE Vizag Bay Section Chapter ([tsnmurthyece.jntuk@ieee.org](mailto:tsnmurthyece.jntuk@ieee.org))

**Dr. Donaldson**, Chair of IEEE LI SPS Chapter ([Signal@ieee.li](mailto:Signal@ieee.li))

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