Title: Change the world by Signal and Information technologies

Speaker:

Dr. Yuichi Nakamura

Executive Specialist in NEC

Abstract:

Because of the increasing urban population, various social problems would occur in various areas, for example, public safety, traffic and logistics, food supply, and healthcare. In cases, an integration of ICT (Information and Communication Technology) by using "Signal and Information technologies" is one of the good methods to solve such problems. In the signal and information technologies area, many innovative technologies are proposed. 8K TV, 5G mobile communication, machine learning, deep learning, and quantum computing could be leading candidates to solve social problems.

In this talk, the relationship between such social problems and innovative technologies is presented. Especially, real use cases based on NEC's technologies are introduced.

Yuichi Nakamura received his B.E. degree in information engineering and M.E. degree in electrical engineering from the Tokyo Institute of Technology in 1986 and 1988, respectively. He received his PhD degree from the Graduate School of Information, Production and Systems, Waseda University, in 2007. He joined NEC Corporation in 1988, and he led NEC's research about embedded system design as a general manager and a vice president of NEC research. Currently, he is an executive specialist at NEC Corporation. He is also a guest professor at the National Institute of Informatics, Waseda University, and Tokyo University. He has more than 30 years of professional experience in embedded system design, signal processing, and quantum computing.

Title: Artificial Neural Networks and tools for Micro controllers

Speaker:

Danilo Pau
Technical Director, IEEE & ST Fellow
System Research and Applications
STMicroelectronics, Agrate Brianza

Abstract:

Is Artificial Intelligence a trendy technology or a singularity? With this key question in mind, the talk will review key milestones, discuss limitations of centralizing intelligence and review challenges and opportunities of having intelligence closer to sensors which produces data in real time. Next it will talk and demonstrate ST methodology and tools for automatic deployment of pre trained neural networks on company micro controllers (MCU): STM32 and Chorus. It will conclude with some considerations on ultra low power AI and about a more comprehensive AI ecosystem which the MCU mass market is looking at.

Danilo Pau, graduated at Politecnico di Milano, on 1992 in Electronic Engineering. He joined SGS-THOMSON (now STMicroelectronics) on 1991 and worked on mpeg2 video memory reduction, then video coding, transcoding, embedded graphics, computer vision, and currently on deep learning. During his career helped in transferring those developments into company products. Also funded and served as 1st Chairman of the STMicroelectronics Technical Staff Italian Community; he is currently Technical Director into System Research and Applications and a Fellow Member of ST. Since 2019 Danilo is an IEEE Fellow, serves as Industry Ambassador coordinator for IEEE Region 8 South Europe, is vice chair of the Task Force on "Intelligent Cyber-Physical Systems" within IEEE CIS and Member for the Machine learning, Deep learning and AI in CE (MDA) Technical Stream Committee IEEE Consumer Electronics Society (CESoc).

Contributed with 113 documents the development of Compact Descriptors for Visual Search (CDVS), CDVS successfully developed ISO-IEC 15938-13 MPEG standard. He was Funding Chair of MPEG Ad Hoc Group on Compact Descriptor for Video Analysis (CDVA), formerly Compact Descriptors for Video Search (CDViS). He also contributes (applications) to MPAI.community recently started by L. Chiariglione. His scientific production consists of 93 papers to date, 81 granted patents and 31 invited talks/seminars at various universities and conferences. He was also principal investigator into numerous funded projects at European and Italian level on embedded systems.

Danilo tutored lots of undergraduate students (till Msc graduation), Msc engineers and PhD students from various universities in Italy; France and India, one of the activities that he likes at most.