Towards the design of an end-to-end smart video surveillance system

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Speaker:
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Abstract:
Security and monitoring systems are increasingly being deployed to control and prevent abnormal events especially in situational awareness applications before irreversible damages occur including national security, deaths and infrastructure destructions but to name a few. For example, the security and protection of airports, national infrastructures, and private or public services require cost effective solutions for use both in low or high risk environments. Such solutions would lead to increased security levels thus resulting in higher societal and economic impact. The recent advances in electronic Computer Aided Design (CAD) tools have led to much advanced hardware devices especially for multimedia and wireless applications. This has resulted in increased deployment worldwide of sensor networks for visual/video surveillance and security purposes which have gained much maturity due to the availability of cost effective distributed sensor nodes and very recently to the renewing interest in Artificial Intelligence and very recently the renewed interest in artificial intelligence due to the development of high-performance computing tools and technologies. We are now witnessing a decisive turning point in the field of visual information processing with the large-scale development of approaches based on deep learning. In this talk I will focus much more on the aspects related to the quality of the video stream at different stages of the acquisition, processing and transmission chain. I will discuss some challenges, solutions, preliminary results and promising avenues to move towards completely intelligent end-to-end systems.

Bio:
Dr. Azeddine BEGHDADI is Full Professor at University Sorbonne Paris Nord since 2000. He is the founding member of the Laboratory of Information Processing and Transmission (L2TI laboratory) and was its director from 2010 to 2016. He was promoted to the Exceptional Class Professor in July 2016. He started his education at ENSEP (Oran-Algeria) and Physics Institute at University Oran Es-Senia. He obtained a master's degree in optics and signal processing from University Orsay-Paris XI in June 1983 and the PhD in Physics (Optics and Signal Processing) from Sorbonne University (Paris 6) in June 1986. Dr. Beghdadi worked at different places including « CNRS – Solid Optics Laboratory » (Sorbonne University, Paris 6), CNAM Paris and LPMTMCNRS Laboratory (University Paris Nord) from 1987 to 1998. Dr Beghdadi has been involved in several international and national projects as steering board member, work package leader, or principal investigator. He has also served as a member of several expert panels of research funding agencies in France and Australia. He published over than 290 international refereed scientific papers. His research interests include image quality enhancement and assessment, image and video compression, bio-inspired models for image analysis and processing. Dr. Beghdadi is the founder and Steering Committee Chair of the European Workshop on Visual Information Processing (EUVIP). Dr Beghdadi is associate editor of “Signal processing : Image Communication”, Journal, Elsevier, European journal on image and video processing, Springer Verlag, Journal of Electronic Imaging, SPIE Digital Library, and Mathematical Problems in Engineering, Journal, Hindawi. He received several awards for excellence in graduate research supervision and several best paper awards at IEEE conferences. Dr Beghdadi served as conference chair and technical chair of more than 10 IEEE conferences. He is a member of EURASIP and IEEE-MMTC and a senior member of IEEE.