Conference International
"Ambient intelligence Everywhere: Convergence of Technologies for an Integrated Infrastructure"

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Abstract:
  Adaptability and advanced services for ambient intelligence require an intelligent technological support for understanding the current needs and the desires of users in the interactions with the environment for their daily use, as well as for understanding the current status of the environment also in complex situations. This infrastructure constitutes an essential base for smart living, smart industry and environmental engineering. Various technologies are nowadays converging to support the creation of efficient and effective infrastructures for ambient intelligence.

  Artificial intelligence can provide flexible techniques for designing and implementing monitoring and control systems, which can be configured from behavioral examples or by mimicking approximate reasoning processes to achieve adaptable systems. Machine learning can be effective in extracting knowledge form data and learn the actual and desired behaviors and needs of individuals as well as the environment to support informed decisions in managing the environment itself and its adaptation to the people's needs.

  Biometrics can help in identifying individuals or groups: their profiles can be used for adjusting the behavior of the environment. Machine learning can be exploited for dynamically learning the preferences and needs of individuals and enrich/update the profile associated either to such individual or to the group. Biometrics can also be used to create advanced human-computer interaction frameworks.

  Cloud computing environments will be instrumental in allowing for world-wide availability of knowledge about the preferences and needs of individuals as well as services for ambient intelligence to build applications easily.

  This talk will analyze the opportunities offered by these technologies to support the realization of adaptable operations and intelligent services for ambient intelligent infrastructures for smart living, smart industry and environmental engineering.

Biography:

Vincenzo Piuri has received his Ph.D. in computer engineering at Politecnico di Milano, Italy (1989). He is Full Professor in computer engineering at the Università degli Studi di Milano, Italy (since 2000). He has been Associate Professor at Politecnico di Milano, Italy and Visiting Professor at the University of Texas at Austin and at George Mason University, USA.

His main research interests are: intelligent systems, artificial intelligence, signal and image processing, machine learning, pattern analysis and recognition, biometrics, intelligent measurement systems, industrial applications, cloud computing, and dependablity. Original results have been published in more than 400 papers in international journals, proceedings of international conferences, books, and book chapters.

He is Fellow of the IEEE, Distinguished Scientist of ACM, and Senior Member of INNS. He has been IEEE Vice President for Technical Activities (2015), IEEE Director, President of the IEEE Computational Intelligence Society, Vice President for Education of the IEEE Biometrics Council, Vice President for Publications of the IEEE Instrumentation and Measurement Society and the IEEE Systems Council, and Vice President for Membership of the IEEE Computational Intelligence Society.

He is Editor-in-Chief of the IEEE Systems Journal (2013-19), and Associate Editor of the IEEE Transactions on Computers and the IEEE Transactions on Cloud Computing, and has been Associate Editor of the IEEE Transactions on Neural Networks and the IEEE Transactions on Instrumentation and Measurement.

He received the IEEE Instrumentation and Measurement Society Technical Award (2002). He is Honorary Professor at Obuda University, Budapest, Hungary, Guangdong University of Petrochemical Technology, China, Northeastern University, China, Muroran Institute of Technology, Japan, and the Amity University, India.