Guest Editorial

Special Issue on Mobile Telemedicine and Telehealth Systems

The IDEA of this Special Issue was crystallized in Amsterdam, The Netherlands, during the ITIS-ITAB’99 Conference in April 1999 and a discussion with the Editor-in-Chief and other editorial members of the IEEE TRANSACTIONS ON INFORMATION TECHNOLOGY IN BIOMEDICINE (T-ITB) on this overdue and important area in telemedicine.

The convergence of information and telecommunication infrastructures around telemedicine and mobile telecare systems is fostering a diversity of cost-effective and efficient mobile applications. These applications will soon prove to have a powerful impact on the way different healthcare organizations are delivering healthcare to their patients and will reshape the future of healthcare delivery by utilizing such emerging telemedical technologies. These will also provide a new dimension to the original definition and concept of telemedicine as “medicine practiced at a distance” that will envisage new mobility directions in reshaping the structure of healthcare delivery globally into the next millennium. There is a unique perception of the similarities between the evolution of mobile telecommunications and new bioinformatics and computing concepts and their impact on the development of the next generation of medical care and monitoring systems. While bioinformatics includes the concept of the flow of information within a biological system, telemedicine is based on the use of communications systems and computing in medicine. The fact remains that both systems operate on receiving, interpreting, and acting upon signals, except that the first is done within the biological and molecular environment and the latter in digital, Internet, or in cellular environments. This interesting comparison will perhaps clarify the future vision into this important area and realize its instrumental role in shaping the future of our existing healthcare systems.

The main contribution of this issue is to assemble original and innovative contributions in the areas of mobile telemedicine and telehealth systems relating to the integration of the mobile telecommunication and computing technologies to provide high integration levels of these technologies in different telemedical and telehealth applications. The future directions in these areas will focus on more research, publications, and relevant work integrating the next generation of wireless communication and IP mobility systems for different telemedicine telehealth applications.

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