Special Session III

Special Session Basic Information:

Session Title	Machine Vision for Quantitative Ophthalmic Measurement: From Image Quality Control to Automated Anterior Chamber Assessment

Introduction and topics

  Machine vision systems are increasingly required to deliver reliable quantitative measurements in real-world applications. This invited talk presents a vision-based measurement framework applied to ophthalmic imaging, where controlled optical acquisition, image quality assessment and learning-based analysis are jointly designed to ensure robustness and accuracy. The talk focuses on two closely related case studies: automatic classification of eye images to assess acquisition quality, and vision-based measurement of the anterior chamber angle using machine learning techniques. Experimental results obtained on real ophthalmic datasets demonstrate how machine vision performance strongly depends on acquisition design and validation metrics, rather than on algorithms alone. The presented work highlights key design principles for deploying machine vision as a measurement tool in biomedical applications, with implications extending to other vision-based sensing domains.

Special Session Chair(s):

Name	Luigi Rovati
Prefix	Professor
Department	
Organization	University of Modena and Reggio Emilia, Italy
城市/地区 City/Region	

Organizer's Brief Biography

  Luigi Rovati is Full Professor of Electronic Instrumentation and Measurement Science at the University of Modena and Reggio Emilia, Italy. His research activity focuses on optical and vision-based measurement systems, sensor design, and data-driven analysis for quantitative applications. He has authored over 200 scientific publications and his work spans biomedical imaging, machine vision, and advanced optical sensing. His research combines instrumentation, signal and image processing, and machine learning with a strong emphasis on measurement accuracy and validation.