

5G Academy



SEMINAR ANNOUNCEMENT

Tuesday 27 April 2021, Time: 10am-12pm Platform Ms Teams
5G Academy's Seminar Series; **Code: 654zgy3**; **Link:** QR code below



Dr. Pietro Ferraro, Dr. Pasquale Memmolo

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Artificial Intelligence and 5G combined with holographic technology: a new perspective for remote health monitoring

Abstract: In the last decade, Digital Holography (DH) in microscopy has gained credit as one of the elective imaging techniques in biomedicine, mainly due to the uniqueness of the DH to provide a posteriori quantitative multiple refocusing capability and phase-contrast imaging in label-free and full-field modalities. Nowadays, cost-effective and portable holographic microscopes can be set-up for remote healthy monitoring even if the high image

sizes (tens of megapixels) along with the computational costs of their processing represent the main limitation to the real commercial use.

The seminar focus on a new perspective to overcome this drawbacks by combining the holographic technology with Artificial Intelligence and 5G connection to speed up the computational processing and permits fast connection with central laboratory or hospital

Bio:

Pietro Ferraro received the graduate degree (cum laude) in physics from the University of Naples "Federico II," Naples, Italy, in 1987. He founded the Institute of Applied Sciences and Intelligent Systems (ISASI) of CNR and has been the Director from 2014 to 2019. Actually, he is the Research Director with ISASI. His research areas include digital holography, microscopy, laser interferometry, lithography, ferroelectric crystals for photonic applications and lab-on-a-chip for biomedical applications. He has authored or coauthored more than 320 articles in peer-reviewed journals and more than 200 conference papers. He was Elected Fellow of SPIE in 2008 and a Fellow of the Optical Society of America in 2010. In 2020, he received the SPIE Dennis Gabor Award.

Pasquale Memmolo received the Ph.D. degree in electronic and telecommunication engineering from the Università degli Studi di Napoli "Federico II," Naples, Italy, in 2012. From 2012 to 2015, he was PostDoc with the Center for Advanced Biomaterials for Health Care@CRIB, Italian Institute of Technology, Italy. In 2016, he joined the Institute of Applied Science and Intelligent Systems "E Caianiello" (ISASI), National Research Council of Italy and in 2020 he got the Senior Researcher position. His main research interests cover the field of computational microscopy, ranging within topics, such as digital holography, optical engineering, optical tomography, microfluidics, lab-on-a-chip, computer vision and machine learning. He has authored or coauthored 70 articles in peer-reviewed journals and more than 120 conference papers

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