

DIGITAL PATHOLOGY & IMAGE ANALYSIS

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Integrative computational pathology and beyond

Histopathology examination represents a milestone of the diagnostic and therapeutic decision. Concretized by the pathology report, essential to the multidisciplinary team (MDT) meetings in hospitals. It relies on professional observation and judgment, integrating: Morphological criteria (tumor morphological identity) issued from standard and complementary (histochemistry, enzymology, hybridation in situ, scores) preparations, observations, consolidated by clinical, radiological and biological contexts - among which, molecular. The future of histopathology is obviously digital (data and images). The challenge is to conciliate, in the framework of the healthcare, various usual missions as doing the diagnosis for the patient in the present moment, warehousing the medical data for the patient record, and also feeding and structuring the research strategy - particularly in oncology. Due to its important legal role, the pathology has a key position in the medical diagnostic. At the junction of medical imaging modalities and the omics, this medical exam represents the bottleneck enabling us to go to building a representative local database. We are initiating a program of care monitoring for which the milestones and the impact will be: The production of digital histopathology tools, the modeling of the pathway and the conceptualization of the associated massive database in Peru, with a strong wish to extend it to Andean and Latin American countries. This initiative will allow us to bring in and structure a database (whole slide images, omics, clinical data and metadata) corresponding to a very diverse population (mestizos, amerindians, european, asian-peruvian, afro-peruvians ...) coming from very different regions (coast, rainforest, highlands), with difficult access and difficult to reach, representative to Peru/Andean/Latin American regions.

Biography

Daniel Racoceanu is a Professor in Biomedical Imaging and Data Computing at the Pontifical Catholic University of Peru. Since 2016, he has a tenured Professor position at Sorbonne Université since 2011. His areas of competency are Medical Image Analysis, Pattern Recognition, and Machine Learning with his present research being mainly focused on Digital Pathology and its Integrative aspects. He has completed Dr.Habil. (2006) and PhD (1997) at University of Franche-Comté, France. He was Project Manager at General Electric Energy Products - Europe, before joining, in 1999, as a Associate Professor at the University of Franche-Comté and Research Fellow at FEMTO-ST Institute (French National Research Center - CNRS), Besancon, France. Between 2014 and 2016, he was a member of the Executive Board of the University Institute of Health Engineering of the Sorbonne Université, Paris. During the same period, he lead the Cancer Theranostics research team at the Bioimaging Lab, a joint research unit created between Sorbonne Université, CNRS and INSERM (French National Institute of Health and Medical Research). He participated in the creation of International Joint Research Unit (UMI CNRS) in Singapore, being the Director (from 2008 to 2014) of this joint research venture between the Sorbonne Université (SU), the French National Center for Scientific Research (CNRS), the National University of Singapore (NUS), the Agency for Science, Technology and Research (A*STAR), and the Univ. Grenoble Alpes (UGA), in Singapore. From 2009 to 2015, he was Full Professor (adj.) at the School of Computing, National University of Singapore (NUS).

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