L'Ing. **Joseph Stancanello** dell'Elekta Instrument AB Stockholm, terrà il seguente seminario presso il Dipartimento di Matematica e Informatica via Archirafi 34, 90123 Palermo:

Artificial Intelligence in Radiation Therapy: a quantum leap in knowledge and speed

04 Giugno 2021 alle ore 14:00
Modalità mista: Telematica e aula 7

Abstract: Radiation therapy (RT) is historically a successful treatment option to treat cancer based on the different response to radiation (e.g. x-ray, particles) between normal and cancerous cells. RT workflow is time consuming and consists of several offline and online steps: treatment simulation, treatment planning, patient positioning, treatment delivery, motion management, adaptive replanning and follow-up. New trends in RT call for more efficient workflows, also in light of the new radiobiological advantages suggested by dose delivery in extremely short time windows (e.g. ms compared to current minutes) based on ultra high dose rates. Artificial Intelligence (AI) has embraced most part of medical applications and holds the promise to speed up many time-consuming steps in the RT workflow. As a matter of example, a deformable registration time between medical image volumes decreased from several minutes using conventional deterministic approaches (e.g. mutual information plus regularization cost function) to a few ms using deep learning. In this seminar we will investigate the promise and the potential of AI to improve RT workflow efficiency and, far beyond that, embed big data knowledge into the workflow to make the outcome of RT more effective, e.g. by means of radiomics and deep learning techniques.

Dr. Stancanello is currently global VP of Clinical Applications at Elekta, he graduated with Ph.D. and Executive MBA degrees from Politecnico di Milano-School of Management, Italy, in the field of imaging and therapy. He specialized in driving strategic innovation at International Institute for Management Development in Lausanne, Switzerland. He has taught mathematical analysis at Padova University, Italy.
Along his career, he has served in several roles at Siemens Headquarters in Germany as Principal Expert and Director of product portfolio in oncology and at GE Healthcare in France as Director of MRI research and applications and workflow, and as executive director of AI program jointly developed by IBM and Guerbet. He is co-author of more than 100 abstracts, full papers and book chapters as well as many patents.

Il presente annuncio vale come invito.

Domenico Tegolo