

**THE DEPARTMENT OF COMPUTER SCIENCE & THE COMPUTER SCIENCE
GRADUATE STUDENT ORGANIZATION (GSOCS) PRESENT**

INVITED SPEAKER SERIES

co-sponsored with GSO and partially paid for by student activity fees

Dr. Issam El Naqa

University of Michigan, Ann Arbor, MI

Friday, November 22nd at 12 noon, Fine Arts room 258

Towards a Practical Implementation of Artificial Intelligence in Oncology

Abstract: There has been tremendous excitement in recent years in the implementation of artificial Intelligence (AI) and machine learning algorithms (ML) in routine oncology practice. This is chiefly motivated by the ability of these technologies to automate laborious routine tasks, improve efficiency, as well as enhance decision-making support of complex oncology processes from treatment planning, quality assurance, to delivery or providing more advanced prediction of outcomes and adaptation of daily treatments. However, such anticipated transformative AI/ML widespread implementation in oncology has been generally limited in scope and in some instances, it has been stagnant despite the known potentials. In this talk, we will re-visit sample AI applications in oncology, discuss the present status of AI/ML in oncology while touching on the some of the main technical and ethical challenges that are impeding broadening AI/ML current role towards delivering safer and better treatments for cancer patients.

Bio: Issam El Naqa received his B.Sc. (1992) and M.Sc. (1995) in Electrical and Communication Engineering from the University of Jordan, Jordan, and was awarded a first place young investigator award for his M.Sc. work. He worked as a software engineer at the Computer Engineering Bureau (CEB), Jordan, 1995-1996. He was awarded a DAAD scholarship to Germany, where he was a visiting scholar at the RWTH Aachen, 1996-1998. He completed his Ph.D. (2002) in Electrical and Computer Engineering from Illinois Institute of Technology, Chicago, IL, USA, receiving highest academic distinction award for his PhD work. He completed an M.A. (2007) in Biology Science from Washington University in St. Louis, St. Louis, MO, USA, with highest distinction, where he was also pursuing a post-doctoral fellowship in medical physics and was subsequently hired as an Instructor (2005- 2007) and then an Assistant Professor (2007-2010) at the departments of radiation oncology and the division of biomedical and biological sciences and was an adjunct faculty at the department of Electrical engineering. He became an Associate Professor at McGill University Health Centre/Medical Physics Unit (2010-2015) and associate member of at the departments of Physics, Biomedical Engineering, and Experimental medicine, where he was a designated FRSQ and CIHR scholar. He is currently a Professor of Radiation Oncology at the University of Michigan at Ann Arbor and associate member in Applied Physics. He is a certified Medical Physicist by the American Board of Radiology. He is a recognized expert in the fields of artificial intelligence, machine learning, image processing, bioinformatics, computational radiobiology, and treatment outcomes modeling and has published extensively in these areas with more than 150 peer-reviewed journal publications and 4 edited textbooks. He has been a senior member and fellow of several academic and professional societies. His research has been funded by several federal and private grants and serves as a peer-reviewer and editorial board member for several leading international journals in his areas of expertise.

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Refreshments will be provided!