Biomedical Image Computing and Informatics Seminar

"Oncology application of artificial intelligence methods: Current clinical needs and barriers to implementation"

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Smillow Rubenstein Auditorium & Commons
3400 Civic Center Blvd.
Thursday, February 28, 2019 at 1pm
Pizza lunch at 12:45pm

Abstract

Our understanding of cancer has evolved significantly in the past decades. Clinicians have a greater awareness of the vast complexity of the disease, but as this complexity has increased, our ability to process all the data in a meaningful way increasingly depends on large dataset analysis, for which most clinicians lack adequate training. Adoption of machine learning tools and artificial intelligence methods (or, for that matter, almost all novel concepts) in the generalized clinical workflow is not straightforward. In this seminar I will review selected challenges in oncology which may be addressed using large data analysis, with some examples of existing approaches, and outline some of the logistical and philosophical barriers to their implementation.

Bio

Dr. Shukla is a 2004 graduate of Duke University, where he majored in biomedical and electrical engineering. He joined the Medical Scientist Training Program at the University of Pittsburgh and Carnegie Mellon University, earning his Ph.D. in bioengineering and his M.D. in 2012. He developed and tested a new method for viewing medical images for his dissertation, and he was awarded the Bevier Fellowship as a graduate student. He completed further training during a post-doctoral fellowship at the University of Pennsylvania, a transitional year medical internship at the University of Pittsburgh Medical Center, and a radiation oncology residency at Thomas Jefferson University, serving as Chief Resident during his last year of training. Dr. Shukla is an Adjunct Assistant Professor of Radiology and Radiation Oncology at the University of Pennsylvania, where he collaborates with other experts to develop image-based personalized medicine approaches for patients with cancer. He has presented clinical trial concepts at the NRG, an NCI-funded organization committed to advancing the care of patients across North America. He remains committed to providing excellent care to his patients, and his clinical interests include prostate cancer and other genitourinary cancers, brain and central nervous system tumors, and head-and-neck cancers, as well as other disease sites. Dr. Shukla has authored numerous peer-reviewed manuscripts, book chapters, and abstracts, including a book chapter in the American Cancer Society's Textbook on Cancer. He has presented at regional, national, and international cancer conferences and medical image analysis symposia. He has successfully competed for institutional and government research awards. He is a member of multiple professional societies and organizations, including the American Society for Radiation Oncology, the American Society of Clinical Oncology, and the American College of Radiation Oncology.