

University of Houston - Biomedical Engineering Seminar

Friday, August 28, 2020, 12 noon

Via Zoom: <https://uofh.zoom.us/j/95118412374>

Computational Renal Pathology: Growing Opportunities for Engineers



Prof. Pinaki Sarder

Abstract

Modern advances in digitization of histopathological slides and parallel advancements in computer hardware have opened up new opportunities for the computational focused image analysis. Thus far cancer pathology has been the main area of computational application, however the study of renal pathology using computational tools is on the rise. In this talk, I will introduce computational pathology using examples from renal pathology, and discuss applications and challenges of applying machine learning tools for detection, segmentation, quantification, and classification of microanatomical structures from digital renal histology whole slide images. I will also sketch ideas for the integration of non-image metadata, and discuss ongoing efforts for the development of an end-user web platform for disbursing these tools to the broader community. I will conclude by discussing potential barriers that still need to be addressed for adopting these developed tools in clinical practice.

Biosketch

Pinaki Sarder is currently an assistant professor of pathology and anatomical sciences at University at Buffalo, with adjunct appointments in biomedical engineering and biostatistics. Earlier he was a post-doctoral research associate at Mallinckrodt Institute of Radiology at Washington University School of Medicine in St. Louis. He received the B.Tech. degree in electrical engineering from the Indian Institute of Technology, Kanpur, in 2003, and the M.Sc. and Ph.D. degrees in electrical engineering from Washington University in St. Louis, in 2010. Dr. Sarder serves in the editorial board of the *Journal of the American Society of Nephrology (JASN)*, and is a senior member of IEEE. He is a recipient of University at Buffalo's Exceptional Scholars – Young Investigator Award in 2018. His current research interests include computational image analysis and digital pathology with applications to renal pathology informatics.