



UNIVERSITY OF DELAWARE

DATA SCIENCE
INSTITUTE

Data Science Institute Brown Bag Lunch Series

Applications of Deep Learning in Healthcare



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Friday, April 26, 2019 * 12:20-1:20am * STAR Tower Room 613

We have evaluated machine learning and deep learning algorithms for automated phase classification videos of cataract surgery. Competence in cataract surgery is a public health necessity, and videos of cataract surgery are routinely available to educators and trainees but currently are of limited use in training. Machine learning and deep learning techniques can yield tools that efficiently segment videos of cataract surgery into constituent phases for subsequent automated skill assessment and feedback. We also did the Identification of Post-Extubation Ulcerations and Granulomas: An Early Application of Machine Learning in Laryngoscopy Analysis. Since Automated classification of biomedical images is extremely challenging due to the precision required and the limited amount of annotated data available for training. Convolutional neural networks (CNNs) have the potential to improve image analysis, and have demonstrated good performance in many settings. Additionally in this talk, we will also cover comparison of Automated Activity Recognition to Provider Observations of Patient Mobility in the ICU.

Dr. Haider Ali is an Assistant Research Professor in the Department of Computer Science at the Johns Hopkins University. He was an Associate Research Scientist at Center for Imaging Science (CIS), JHU from 2017-2018. Prior to joining the Johns Hopkins University, he was a Senior Research Scientist at the Institute of Robotics and Mechatronics (RM) of the German Aerospace Center (DLR), Germany. He received his Ph.D. in Computer Science at Vienna University of Technology, Austria in 2010.
