

BIOINFORMATICS SEMINAR

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UNIVERSITY OF DELAWARE

MARKER-FREE BIOMECHANICAL ANALYSIS FROM LABORATORY TO REAL WORLD

There is a rapid advance of marker-free biomechanical analysis over the past decade. Behind the surge are the availability of vast amounts of data and sophisticated machine learning (ML) and computer vision (CV) algorithms. However, there exists a substantial gap when extending marker-free biomechanical analysis from laboratory data to real-world applications. In this talk, we will present three pillars and research opportunities from the machine learning perspective to close the gap: 1) Robust vision-based kinematic estimation, 2) Generalizing ML model to unseen domains, and 3) Learning from unpaired multimodal data.

BIOGRAPHY

Dr. Xi Peng is an assistant professor of the Department of Computer & Information Sciences, and a resident faculty of the Data Science Institute, at the University of Delaware. He works in the area of Deep Learning, Machine Learning, and Computer Vision, with a special interest in two directions: 1) Data-intensive scientific machine learning; 2) Human-centered computer vision. He is making efforts in developing strong, flexible, and transparent AI systems for interdisciplinary data analytics in biomechanics, bioinformatics, geography, and earth science. His research group (Deep-REAL lab) is publishing in top-ranked conferences (NeurIPS, ICLR, CVPR, ICCV, ECCV, AAAI, IJCAI, KDD), leading journals (TPAMI, TIP, IJCV, THMS), as well as US patents. His current research received awards and supports from NSF, CDC, NIOSH, Google Research, Snap Research, and multiple internal sponsors.

CBCB SEMINAR

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3:30-4:30PM

AP BioPharma

Room 140

(590 Avenue 1743)

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