İstanbul Bilgi University

Department of Genetics and Bioengineering
10th Anniversary Year (2010-11 - 2020-21)
Seminar Series

"Omic Data Analysis Using Network Science"

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Professor of Electrical and Computer Engineering
University of Nebraska–Lincoln

12 November 2020; 18:00

Register in advance for this webinar:
https://us02web.zoom.us/webinar/register/WN_UpwERmpQRBe4qwG6AD1yuQ

About the Seminar:
Over the past 20+ years, with the availability of genomic sequences, high throughput technologies have been used to gauge omics levels in biological systems. Typical data types include transcriptomics, genomics (or genotyping), and proteomics that measure/identify gene expression levels, DNA sequence/variations, and protein abundance. From a life science perspective such big data are best analyzed and explained within the context of networks. In particular, we are interested in two questions: (i) given high throughput biological data (HTBD), which known pathways best explain the observed data, (ii) given HTBD, what are the interaction networks that can be deduced? In this talk I will give an overview of the field of Bioinformatics, establish a workflow for omics data analysis, and describe two methods that use probabilistic graph representations to answer the posed questions.

About the Speaker:
Hasan H. Otu obtained his B.S. degree in 1996 and his M.S. degree in 1997, both from Bogazici University, Department of Electrical and Electronics Engineering. In 2002, he graduated from the University of Nebraska-Lincoln with a Ph.D. in Electrical Engineering focusing on Bioinformatics.

He has been a faculty member at Harvard Medical School (2003 - 2012), where he was a research fellow between 2002-2003. Dr. Otu is the founding director of Bioinformatics Core at Beth Israel Deaconess Medical Center, Harvard Medical School and Associate Director of Proteomics Core at Dana Farber Harvard Cancer Center. Between 2010-2013, Dr. Otu was the founding chair of the Department of Genetics and Bioengineering at Istanbul Bilgi University. Since 2013, Dr. Otu is a Professor of Electrical and Computer Engineering at the University of Nebraska-Lincoln.

Dr. Otu's research interests are in the area of Bioinformatics focusing on macromolecular sequence analysis, microarrays, biomarker discovery, genetic variations and systems biology, analyzing high throughput biological data within the context of networks. Dr. Otu has published over 70 journal articles and ~50 conference proceedings, which have received over 5,000 citations. Dr. Otu has written 5 book chapters and holds 6 U.S. patents.

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