CS Departmental Seminar
Monday, February 11, 2019; EC 205 at 11:00 a.m.-11:50 a.m.

Title: Machine Learning in Computational Biology

In recent years, the field of computational biology has seen tremendous growth due to the availability of high throughput technologies to measures parts of biological system along with the development of modeling strategies to analyze the vast datasets collected. However, there are significant challenges that needs to be addressed before achieving the full potential of genome based personalized medicine. In this talk, I will present ongoing research in my lab on designing predictive models based on heterogeneous data types. Various issues relevant to the design of predictive models such as data inconsistencies, knowledge transfer and heterogeneity will be discussed along with methodologies to tackle them. I will also present an alternative approach designed in our research group for high accuracy predictive model generation integrating both genomic and functional characterizations.

Dr. Ranadip Pal received the B.Tech degree in electronics and electrical communication engineering from the Indian Institute of Technology, Kharagpur, India, in 2002, and the M.S. and Ph.D. degrees in electrical engineering from Texas A & M University, College Station, in 2004 and 2007, respectively. From August 2007, he has been with Texas Tech University where he is currently an associate professor in the Electrical and Computer Engineering Department. His research areas are genomic signal processing, computational systems biology, machine learning and stochastic modeling and control. He is the author of more than 50 peer-reviewed journal articles including publications in high impact journals such as *Nature Medicine* and *Cancer Cell* and author of a book entitled *"Predictive Modeling of Drug Sensitivity"*. He has contributed extensively to robustness analysis of genetic regulatory networks and predictive modeling of drug sensitivity. His research has been supported through NSF and NIH grants including NSF Career and an NIH R01. His research group was a top performer in NCI supported drug sensitivity prediction challenge. Pal received the Chancellor's council distinguished research award 2016, Whitacre Research Award, 2014; President's excellence in Teaching Award, 2012; and NSF CAREER Award, 2010.