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THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Big Data Institute / Division of Life Science

Joint Seminar

Application of Deep Learning in Bioinformatics

by

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Abstract:

Deep learning, as the cutting-edge technology in machine learning, has produced remarkable improvements on various computational problems and presents a new opportunity in bioinformatics. The growing amount of various biomedical data also allows deep learning to generate robust models. In this talk, I will present several of our successful deep-learning applications: (1) We developed MusiteDeep, the first deep-learning framework for predicting general and kinase-specific phosphorylation site. MusiteDeep takes raw sequence data as input and uses CNN with a novel two-dimensional attention mechanism. (2) We developed a deep neural network approach for large-scale prediction of plant mitochondrial proteins by using various types of features, including amino acid composition, protein sequence profile, and gene co-expression information. (3) We developed a novel feature extraction framework called constrained high dispersal neural networks (CHDNet) for tongue image analysis and health assessment. (4) We applied deep learning in analyzing news text for predicting disease trend.

Date	**:**	**30 June 2017 (Friday)**
Time	**:**	**4:00 p.m.**
Venue	**:**	**Lecture Theatre D** **The Hong Kong University of Science & Technology** **Clear Water Bay, Kowloon**

(Host faculty: Dr. Jiguang Wang)

All are Welcome!!