香港科技大學
THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF MATHEMATICS
SCHOOL OF SCIENCE, HKUST

THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

Summer Research Program 2022

PG STUDENT SEMINAR

An Elastic Interaction Based Loss Function in Medical Image Segmentation

By

Miss Yuan LAN

Abstract

In the first part of this talk, I will review the background of image segmentation. The classical and deep learning algorithms in this area will be introduced.

In the second part, I will present our proposed work in medical image segmentation. For biomedical images, general deep learning strategies usually have difficulties achieving high precision for complicated structures. We proposed a training strategy for the deep neural network to tackle this problem by considering the elastic interaction between the predicted region and ground truth. Under the supervision of the proposed loss, the boundary of the prediction is attracted strongly by the object boundary and tends to stay connected. This model which combines the laws of physics and the deep learning model, shows considerable improvements in accuracy than the standard used models in deep learning.

Date : 19 July 2022 (Tuesday)
Time : 3:00pm
Zoom Meeting : https://hkust.zoom.us/j/96928192813 (Passcode: 265678)

All are Welcome!