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DEPARTMENT OF STATISTICS AND ACTUARIAL SCIENCE
THE UNIVERSITY OF HONG KONG

Departmental Seminar

Professor Anthony Y.C. KUK

Department of Statistics and Applied Probability
National University of Singapore
Singapore

will give a talk
entitled

SHORT AND LONG-TERM HAZARD RATIO MODELLING IN SURVIVAL ANALYSIS

Abstract

A brief survey on methods to handle non-proportional hazards in survival analysis will be given with emphasis on short and long-term hazard ratio modelling. A drawback of the existing model of this nature is that except at time zero or infinity, the hazard ratio for a unit increase in the value of a covariate depends on the starting value. With two or more covariates, the hazard ratio for a unit increase in one covariate with other covariates held fixed depends in an unintended way on the values of the other covariates. We propose an alternative way to model short-term and long-term hazard ratios without the above drawbacks through a judicious choice of covariate-time interactions. Under the new model, it is easier to describe the time-varying effect of each covariate on the hazard. Nonparametric maximum likelihood estimation for the new model can be carried out in the same way as for the existing model. We also propose a product version of the existing model which overcomes its second drawback but not the first. The advocated covariate-time interaction model provides a better fit to the Veterans Administration lung cancer data set than the original and product versions of the existing model.

on

Wednesday, September 25, 2019

(Refreshments will be served from 2:15 p.m. outside Room 301 Run Run Shaw Building)

2:30 p.m. – 3:30 p.m.

at

Room 301, Run Run Shaw Building

Visitors Please Note that the University has limited parking space. If you are driving please call the Department at 3917 2466 for parking arrangement.

All interested are welcome