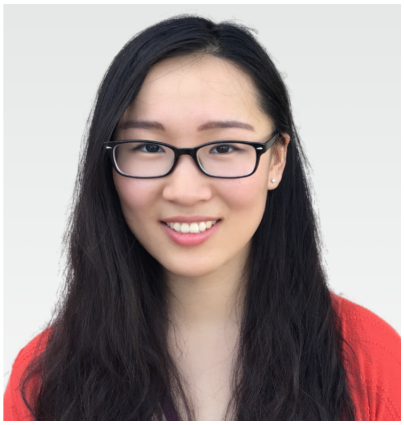
Academic Webinar Series



Jing Wu, Ph.D.
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December 6th, Wednesday 9-10 am EST

For more information regarding upcoming webinar schedule, please contact: medecc.us@boehringer-ingelheim.com

Title

Assessing covariate effects using Jeffreys-type prior in the Cox model in the presence of a monotone partial likelihood

Abstract

In medical studies, the monotone partial likelihood is frequently encountered in the analysis of time-to-event data using the Cox model. For example, with a binary covariate, the subjects can be classified into two groups. If the event of interest does not occur for all the subjects in one of the groups, the resulting partial likelihood is monotone and consequently, the covariate effects are difficult to estimate. In this presentation, we introduce our proposed Bayesian and frequentist approaches using a data-dependent Jeffreys-type prior to handle the monotone partial likelihood. We first carry out an in-depth examination of the conditions of the monotone partial likelihood and then characterize sufficient and necessary conditions for the propriety of the Jeffreys-type prior. We further study theoretical properties of the Jeffreys-type prior for the Cox model. In addition, we propose two variations of the Jeffreys-type prior and develop an efficient Markov-chain Monte Carlo algorithm to carry out posterior computation. We perform extensive simulations to examine the performance of parameter estimates and demonstrate the applicability of the proposed method by analyzing real data from the SEER prostate cancer study.

Professional Biography

Dr. Jing Wu is Assistant Professor at the University of Rhode Island. Her PhD dissertation was on "Bayesian Modeling and Inference for Nonignorably Missing Longitudinal Response Data" under the supervision of Dr. Ming-Hui Chen and Dr. Elizabeth Schifano. Her research interests primarily lie in missing data, longitudinal data, and big data. Dr. Wu received the ENAR Distinguished Student Paper Award in 2017. As a junior researcher, Dr. Wu has published research articles in Statistica Sinica, Technometrics, Canadian Journal of Statistics, JAMA Oncology, and Journal of Clinical Oncology, and so on.

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