Fei Jiang

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Research Interests

semi-parametric model, survival analysis, Bayesian decision-theoretic method, and adaptive trial design.

Skills

B-spline regression, kernel regression, martingale techniques, dynamic programming, GEE, Bayesian non-parametric theory, functional analysis, functional data analysis, survival curve fitting under stochastic constraints.

Honors

ENAR Distinguished Student Paper Awards 2013

Rice Graduate Student Fellowship 2010 – 2012

Education

Rice University, Houston, Texas, USA
Ph.D. in Statistics 2010 – 2013
Advisor: Prof. J. Jack Lee

The University of Texas Health Science Center at Houston, Houston, Texas, USA
M.S. in Biostatistics 2007 – 2010
Advisor: Prof. Dejian Lai

Jiangxi University of Finance and Economics, Nanchang, Jiangxi, China
B.S. in International Finance 2003 – 2007

Research Experiences

Harvard University and University of South Carolina
Postdoctoral Research Fellow 2013 – present
working with Prof. Francesca Dominici, Prof. Lee-Jen Wei, Prof. Yanyuan Ma and Dr. Sebastien Haneuse

Rice University and University of Texas, M. D. Anderson Cancer Center
Research Assistant 2010 – 2013
working with Prof. J. Jack Lee, and Prof. Yanyuan Ma

Teaching Experiences

Mathematic probability, Teaching Assistant, Fall 2010, Rice University
Probability and statistics, Teaching Assistant, Spring 2011, Rice University
Mathematic statistics , Teaching Assistant, Fall 2011, Rice University
RUSIS summer program, Project Leader, Summer 2012, Rice University
Biostatistics summer project, Summer Project Mentor, Summer 2014, Harvard University

Collaboration Experiences

Harvard T. H. Chan School of Public Health and Harvard School of Engineering and Applied Sciences
NIH/Heatwave Group: collaborate with environmental scientist Dr. Loretta J. Mickley and her research group to investigate the heat wave effect on diseases' onset.

Harvard T. H. Chan School of Public Health and Harvard Global Health Institute
Multi-Regional Clinical Trials: collaborate with Dr. Rebecca Li and her research team to develop multi-regional clinical trials across countries.

Invited Talk

Randomization adapted to continuous and discrete covariates in clinical trials
Mathematics and Statistics Department, The University of Nevada, Reno

Publications & Manuscripts

Fei Jiang, Yanyuan Ma, Yuanjia Wang, Fused Kernel-Spline Smoothing for Repeatedly Measured Outcomes in a Generalized Partially Linear Model with Functional Single Index, *Annals of Statistics*, to appear.

Fei Jiang, J. Jack Lee and Peter Mueller, A Bayesian Decision-theoretic Sequential-Response Adaptive Randomization Design, published in *Volume 32, Issue 12, pages 1975-1994, Statistics in Medicine, DOI: 10.1002/sim.5735.*

Fei Jiang, Yanyuan Ma, J. Jack Lee, A semi-parametric method for survival analysis, with application to an AIDS clinical trial study, submitted to *Journal of the Royal Statistical Society: Series C* .

Fei Jiang, Yanyuan Ma, Guosheng Yin, Randomization Adapted to Continuous and Discrete Covariates in Clinical Trials, submitted to *Biometrika*.

Fei Jiang, Sebastien Haneuse, A Semi-parametric Transformation Frailty Model for Semi-competing Risks Survival Data, submitted to *Scandinavian Journal of Statistics*.

Fei Jiang, Lu Tian, Lee-Jen Wei, Estimating the Treatment Difference with Data from a Comparative Randomized Clinical Trial in Presence of Potential Baseline-covariate Imbalance, under preparation

Fei Jiang, Javier Rojo, Survival Function Estimations Under the Stochastic Ordering Constraints, under preparation.

Selected Projects

- **A semi-parametric transformation model for semi-competing risk survival data analysis.**
  A class of semi-parametric transformation model is proposed for analyzing semi-competing risk survival data. The semi-parametric efficient score and a kernel based non-parametric imputation method are combined for the parameter estimation.
- **Estimating the treatment difference with data from a comparative randomized clinical trial in presence of potential baseline-covariate imbalance.**
  A consistent and efficient augmented estimator for treatment effect is proposed and its large sample and finite sample properties are derived and evaluated.
- **A Bayesian decision-theoretic sequential-response adaptive randomization design.**
  The Bayesian decision-theoretic method and adaptive randomization are combined to design a phase II clinical trial. A constraint backward induction and forward simulation algorithm is developed for implementing the design.
- **A semi-parametric method for survival analysis, with application to an AIDS clinical trial study.**
  A second order semi-parametric estimation procedure and a non-parametric imputation method are combined to analyze survival data sets.
- **Fused kernel-spline smoothing for repeatedly measured outcomes in a generalized partially linear model with functional single index.**
  A single-index score model is proposed for a longitudinal data analysis. A fused kernel and B-spline technique is developed for the parameter estimation.
- **Randomization adapted to continuous and discrete covariates in clinical trials.**
  A kernel based continuous covariate adaptive allocation scheme is proposed. The asymptotic property of the procedure is derived by using the martingale techniques.
- **Survival function estimations under the stochastic ordering constraints.**
  A methodology for the survival function estimation under stochastic ordering constraints is proposed. The analytic form and the asymptotic properties of the estimator are derived.

Programming

R, Matlab, Python.

Referees

Prof. J. Jack Lee
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