Tung-Lung Wu

Curriculum Vitae

PERSONAL INFORMATION

Address:	Mississippi State University
	Mathematics & Statistics
	P. O. Box MA
	Mississippi State, MS 39762
Tel:	662-3257154
E-mail	tw1475@msstate.edu

EDUCATION

Ph.D. University of Manitoba (Canada)
Statistics, Jan., 2007 – Oct. 2012

Dissertation Title: Linear and Non-linear Boundary Crossing Probabilities for Brownian Motion and Related Processes
Supervisor: Dr. James C. Fu

Brief Synopsis of Research: Brownian motion is one of the most important processes in the literature. We developed a simple method to compute the non-linear boundary crossing probabilities for Brownian motion and other diffusion processes based on the finite Markov chain imbedding technique.

MS National University of Kaohsiung (Taiwan)
Statistics, Sept., 2003 – June, 2005
Thesis Title: Average Run Lengths of Control Charts for Autocorrelated Processes

BS National Dong Hwa University (Taiwan)
Applied Mathematics, Sept., 1999 – June, 2003

PROFESSIONAL EXPERIENCE

8/2014 – present	Assistant Professor, Mississippi State University, MS, USA
8/2013 – 8/2014	Postdoc, Rutgers University, NJ, USA
8/2012 – 8/2013	Visiting Assistant Professor, University of Connecticut, CT, US
6/2010 – 4/2012	Sessional Instructor, University of Manitoba, Manitoba, Canada
1/2012 – 4/2012	Sessional Instructor, University of Winnipeg, Manitoba, Canada

RESEARCH INTEREST AND EXPERIENCE

My research interests include the following topics: boundary crossing probability (first passage time) of stochastic process, (group) sequential analysis and alpha-spending-function approach in clinical trials, distributions related to runs and patterns (scan statistics), finite Markov chain imbedding technique, spatial scan statistics and high-dimensional data analysis.

PUBLICATIONS

Tung-Lung Wu and Ping Li (2017)
>   Projected Tests for High-Dimensional Covariance Matrices
>   Submitted

Tung-Lung Wu (2017)
>   A note on Erdös and Kac's identity: boundary crossing probability of Brownian motion to constant boundary, submitted

Lei Cao, Li Zhang, Huawei Zeng, Ryan T.Y. Wu, Tung-Lung Wu, Wen-Hsing Cheng (2017)
>   Effects of Sex, Aging, and Long-term Dietary Selenium Deprivation on Selenotranscriptome and Selenium Content in Telomere Dysfunctional Mice, accepted by Journal of Nutrition (2016 IMPACT FACTOR: 4.145)

Tung-Lung Wu (2017)
>   Approximations of distributions of scan statistics of nonhomogeneous Poisson processes, Journal of Statistical Planning and Inference, 190, 52-59.

James C. Fu and Tung-Lung Wu. (2016)
>   Boundary crossing probabilities for high-dimensional Brownian motion.
>   *Journal of Applied Probability,* 53, 543-553

Tung-Lung Wu and Joseph Glaz (2015)
>   A New Adaptive Procedure for Multiple Window Scan Statistics
>   *Computational Statistics & Data Analysis,* 82, 164-172

Tung-Lung Wu, Joseph Glaz and James Fu (2013)
>   Discrete, Continuous and Conditional Multiple Window Scan Statistics.
>   *Journal of Applied Probability* 50, 1089-1101.

Yu-Fei Hsieh and Tung-Lung Wu (2013)
>   Recursive Equation in Finite Markov Chain Imbedding.
>   *Annals of the Institute of Statistical Mathematics* 65, 513-527

Tung-Lung Wu. (2013)
>   On Finite Markov Chain Imbedding Technique and Its Applications. *Methodology and Computing in Applied Probability* 15, 453-465.

James C. Fu, Tung-Lung Wu and W. Y. Wendy Lou (2012).
>   Continuous, discrete and conditional scan statistics.
>   *Journal of Applied Probability,* 49, 199-209.

Yung-Ming Chang and Tung-Lung Wu. (2011)
>   On Average Run Lengths of Control Charts for Autocorrelated Processes.
>   *Methodology and Computing in Applied Probability,* 13, 419-431.

James C. Fu and Tung-Lung Wu. (2010)

Linear and Non-Linear Boundary Crossing Probabilities for Brownian Motion and Related Processes. *Journal of Applied Probability,* 47, 1058-1071.

PROFESSIONAL SERVICE

Meeting Organizer and Session Chairs:

> Scientific program committee member and session organizer for International Workshop on Applied Probability (IWAP) 2016

Referee/Reviewer:
> Statistica Sinica
> Communications in Statistics – Theory and Methods
> IEEE Transactions on Information Theory
> Statistics and Probability Letters
> Journal of Statistical Physics
> Statistical in Medicine
> Journal of the Royal Statistical Society
> Methodology and Computing in Applied Probability
> Journal of Applied Probability
> Statistical Methods and Applications

TEACHING EXPERIENCE

Instructor
> STAT 8413 Multivariate Statistical Methods, Mississippi State University
> STAT 8613 Linear Models, Mississippi State University
> STAT 6573. Introduction to Mathematical Statistics II, Mississippi State University
> STAT 6213 Nonparametric Methods, Mississippi State University
> STAT 8114 Statistical Methods, Mississippi State University
> STAT 4875 Nonparametric Statistical Methods, University of Connecticut
> STAT 5005 Introduction to Applied Statistics, University of Connecticut
> STAT 3025Q Statistical Methods (twice), University of Connecticut
> STAT 1000 Basic Statistical Analysis (four times), University of Manitoba
> STAT 1501 Elementary Biological Statistics, University of Winnipeg

PRESENTATIONS

2017 Joint Statistical Meetings, July 29 - August 3 Baltimore, MD.
> Conditional Waiting Time Distributions of Runs and Patterns and Their Applications

International Workshop on Applied Probability, June 20-23, 2016
> Invited talk: Approximations of Distributions of Scan Statistics of Inhomogeneous Poisson Processes

Statistics Seminar, National Cheng Kung University, June 11, 2015
> Invited talk: Tests for High-Dimensional Covariance Matrices Using Random Matrix Projection

National Taitung University, May 18, 2015

Invited talk: Study abroad

Fourth International Workshop in Sequential Methodologies, July 18 -21, 2013
Invited talk: A new adaptive procedure for multiple window scan statistics

ICSA Symposium, June 9-12, 2013
Invited talk: Multiple window scan statistic and its application

The 27th New England Symposium, April 27, 2013, University of Connecticut
Contributed paper: A new adaptive procedure for multiple window scan statistics

2012 Joint Statistical Meetings, July 28 - August 2 at San Diego, CA.
Contributed paper: Parameter estimation following a group sequential test: a likelihood ratio estimator

The 7-th Cross-strait Symposium in Statistics & Probability and 2010 CIPS Annual Meetings, May $1 - 2$, 2010 at National Dong Hwa University/Taiwan
Contributed paper: On Approximating Distributions of Scan Statistics.

FU-FEST 2009 - A symposium in honour of James C. Fu at University of Manitoba
Invited talk: Linear and nonlinear boundary crossing probabilities for Brownian motion and related processes.

Probability Seminar, June 15, 2009 at Institute of Mathematics, Academia Sinica/Taiwan
Invited talk: Linear and nonlinear boundary crossing probabilities for Brownian motion and related processes.

Joint Meeting of the Statistical Society of Canada and the Société Française de Statistique, May $25 - 29$, 2008 at Ottawa Congress Centre
Contributed paper: Finite Markov Chain Imbedding and Its Application to Matching Probability between Two Markov Dependent Biological Sequences.

The 15th South Taiwan Statistics Conference June $24 - 25$, 2006 at National Sun Yat-Sen University/ Taiwan
Contributed paper: Interval estimates for probabilities or parameters of a waiting time of runs and patterns associated with observed sequences of multi-state trials based on finite Markov chain imbedding approach.

AWARDS/HONORS/FELLOWSHIPS/GRANTS

2014-2015	International Working Group Grant, co-PI, $4,000, Mississippi State University
2014-2015	Cross-College Research Grant, PI, $2,000, Mississippi State University
2013	Outstanding Research by a Graduate Student, University of Manitoba
2007-2010	University of Manitoba Graduate Fellowship (UMGF)
2008-2009	International graduate student scholarship (IGSS)
2008, 2010	Travel Awards to Ottawa (2008) and Taiwan (2010) to attend conferences

MASTER STUDENTS:

Geophrey Odero (statistics, 2015)

Jingjing Wang (statistics, 2016)
Yiyuan Ma (statistics, 2017)
Yang-Chih Tsao (Food Science, Nutrition & Health Promotion, 2017, co-supervisor)