

LIZHEN LIN

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EDUCATION

Bachelor of Science (B.Sc.) in Mathematics and Statistics, Sichuan University, China, 2006.

Doctor of Philosophy (Ph.D.) in Mathematics, Department of Mathematics, University of Arizona, May 2012. (Expected.)

PhD Thesis: **Nonparametric Inference for Bioassay and Environmental Risk Assessment**; Thesis advisor: Prof. Rabi Bhattacharya.

RESEARCH INTERESTS

Bioassay; Benchmark Analysis and Risk Assessment; Nonparametric Smoothing; Large Sample Theory; Survival Analysis; Statistics on Manifolds; Bootstrap Techniques; Isotonic Regression.

PUBLICATIONS

Research Articles

1. Bhattacharya, R. and **Lin, L.** An adaptive nonparametric method in benchmark analysis for bioassay and environmental Studies. *Statistics & Probability Letters*, **80** (2010), 1947-1953.
2. Bhattacharya, R. and **Lin, L.** Nonparametric benchmark analysis in risk assessment: a comparative study by simulation and data analysis. *Sankhya, The Indian Journal of Statistics Ser.B* **73**, Issue 1(2011), 144-163.
3. Bhattacharya, R., Majumdar, M. and **Lin, L.** (2011). Failure of a credit system: Implications of Large Deviation Theory. *Sankhya, The Indian Journal of Statistics Ser.B* , invited paper, to appear.
4. Bhattacharya, R., and **Lin, L.** (2011). Nonparametric methods for quantal bioassay. Preprint.

5. **Lin, L.**(2010) A finite sample study of a new adaptive nonparametric method for quantal bioassay in diverse models. *Proceedings of JSM on general nonparametric methodology section*.

Book

1. Bhattacharya, A. and Bhattacharya, R (With the Assistance of **Lizhen Lin**). *Nonparametric Inference on Manifolds with Applications to Shape Spaces*. IMS monograph. In press (2011).

RECENT PRESENTATIONS/CONFERENCES ATTENDED

1. Colloquium talk: **Nonparametric Inference for Bioassay and Environmental Risk Assessment**, Trinity University, Texas, Feb 15th, 2011.
2. Contributed Speaker: **A Nonparametric Method for the Bioassay and Benchmark Analysis**, at Joint Statistical Meeting, Vancouver, July 31-August 5, 2010.
3. Research Tutorial Group Project. Presented a paper: **Path Integral Method for Time Series**, which applies the MCMC method in data assimilation. December, 2007.
4. Contributed Speaker: **Some Nonparametric Methodologies for Dose-Response Curve and Effective Dosage Estimation**. Conference on Risk Assessment and Evaluation of Prediction, Silver Spring, MD October 12-14, 2011.

WORKSHOPS ATTENDED

1. SAMSI/Sandia Summer School on Uncertainty Quantification - June 20-24, 2011.
2. CBMS Regional Conference-Bayesian Nonparametric Statistical Methods: Theory and Applications, August 16-20, 2010.

HONORS, AWARDS & TRAVEL GRANTS

1. Galileo Circle Scholar 2011, College of Science, University of Arizona.
2. VIGRE Matching Fund Fellowship, University of Arizona, August 2011-December 2011.
3. GPSC Travel Grant Award, University of Arizona, June 2011.

4. SAMSI/Sandia Summer School on Uncertainty Quantification, Travel and Lodging Award. June 20-24, 2011.
5. CBMS Regional Conference-Bayesian Nonparametric Statistical Methods: Theory and Applications, Travel and Lodging Award. August 16-20, 2010.
6. GPSC Travel Grant Award, University of Arizona, July 2010.
7. Graduate Research Assistantship, University of Arizona, June 2010-May 2011
8. Graduate Teaching Assistantship, University of Arizona, August 2006-May 2010.
9. Excellent Undergraduate, Sichuan University, 2006.

TEACHING EXPERIENCE

Courses Taught (as Sole Instructor)

1. **Instructor:** Math 263, *Intro: Stat+Biostatistics*, Spring 2010
2. **Instructor:** Math 120R, *Calculus Preparation*, Fall 2009.
3. **Instructor:** Math 160, *Basic Statistics*, Spring 2009.
4. **Instructor:** Math 110, *College Algebra*, Summer 2008.
5. **Instructor:** Math 110, *College Algebra*, Spring 2008.
6. **Instructor:** Math 110, *College Algebra*, Fall 2007.

Other Teaching Experience

1. **MATH 585: Mathematical Modeling.** Served as a mentor for math modeling projects for undergraduate Students, Spring 2008 and Spring 2009.
2. **MATH 415: Abstract Algebra.** (Fall 2008) Assisted in the instruction of the course of Abstract Algebra by holding problem sessions and grading homework assignments.

Outreach/Service

1. **Sonia Kovalevsky High School Mathematics Day:** Co-organizer Organized Sonia Kovalevsky High School Mathematics Day with two other female graduates students which is aimed at promoting women in science and mathematics, March 2010, University of Arizona.

2. **U of A Integration Workshop:** Participated in the U of A Integration Workshop, 2008 and 2009 as a senior graduate student. Helped to integrate incoming graduate students into the graduate math program.

COURSES TAKEN

1. **Probability and Statistics:** Probability Theory, Stochastic Differential Equations, Theoretical Statistics (A, B), Advanced Statistical Regression Analysis, Categorical Data Analysis, Survival Analysis, Stochastic Process, Independent Study with Bootstrap method; General Linear and Mixed Effects Models.
2. **Mathematics:** Real Analysis, Functional Analysis, Abstract Algebra (A, B), Topology-Geometry (A, B), Numerical Analysis (A, B), Introduction to Mathematical Physics, Complex Analysis: Riemann Surfaces.

SELECTED RESEARCH PROJECTS

1. Survival analysis of COPD, Spring 2009.
2. MCMC method in estimating the probability of failure for Challenge space shuttle disaster, Fall 2008.
3. Regression analysis of factors contributing to home valuations, Fall 2008.
4. MCMC method in estimating the probability of failure for Challenge space shuttle disaster, Spring 2008.

REFERENCES

Research References

1. Professor Rabi Bhattacharya. Department of Mathematics, The University of Arizona, Tucson, AZ 85721, U.S.A.
2. Professor Tom Kennedy. Department of Mathematics, The University of Arizona, Tucson, AZ 85721, U.S.A.
3. Professor Walter Piegorsch. Department of Mathematics, The University of Arizona, Tucson, AZ 85721, U.S.A.

Teaching References

1. Lecturer, Kerima Ratnayaka, Department of Mathematics, The University of Arizona, Tucson, AZ 85721, U.S.A.

COMPUTER SKILLS

Proficient in MATLAB, SAS and Latex.

REFeree EXPERIENCE

Journal of Statistical Computation and Simulation

PROFESSIONAL MEMBERSHIPS

AMS: American Mathematical Society

AWA: Association for Women in Mathematics

IMS: Institute of Mathematical Statistics