

LIKUN ZHANG

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Lawrence Berkeley National Laboratory
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EDUCATION

Pennsylvania State University, State College, PA *August 2015 - May 2020*
PhD in Statistics GPA: 3.90/4.0
Research: High-dimensional Spatial Extremes, Bayesian Modeling, Statistical Theories on Generalized
Extreme Value Distributions
Committee: Benjamin Shaby (Chair), Ephraim Hanks, Lynn Lin, Eric Ford, & Martin Tingley

University of Science and Technology of China, Hefei, China *August 2011 - May 2015*
Bachelor of Science in Statistics GPA: 3.94/4.3

PUBLICATIONS

Zhang, L., Shaby, B. A. and Wadsworth, J. L. (2019+), ‘[Hierarchical Transformed Scale Mixtures for Flexible Modeling of Spatial Extremes on Datasets with Many Locations](#)’, *Journal of the American Statistical Association*, **under review**.

Zhang, L., del Castillo, E., Berglund, A. J., Tingley, M. P. and Govind, N. (2019), ‘[Computing confidence intervals from massive data via penalized quantile smoothing splines](#)’, *Computational Statistics & Data Analysis*, page **106885**.

SUBMITTED MANUSCRIPTS & PREPRINTS

Zhang, L., Shaby, B. A. (2020+). ‘[Reference Priors for Extreme Value Distributions](#)’. *ArXiv e-prints*, *arXiv: 1907.09617*.

Zhang, L., Shaby, B. A. (2020+). ‘[On the Posterior Normality of Extreme Value Distributions](#)’. *ArXiv e-prints*, *arXiv: 2915343*.

PROJECTS

Flooding Risk Assessment for Susquehanna River Using Analogue Precipitation Model
The project aims at predicting flooding risk for Susquehanna river basins with the help of RDHM hydrology model and a novel analogue model for precipitation. Rather than trying to capture all of the complex atmospheric dynamics governing precipitation, the analogue model relies on a mechanism-free, probabilistic analogue approach to approximate those dynamics.

WORK EXPERIENCES

Netflix Inc. *May - Aug 2018*
Data Analyst Intern

Deliver working tools and packages to stakeholders at Netflix that implements response surface analysis, and Bayesian hypothesis testing with incremental updating on massive data chunks.

Netflix Inc. *May - Aug 2017*
Data Analyst Intern

Develop R package and a Shiny App for implementing quantile smoothing splines on streaming quality-of-experience data in both 1 and 2 dimensions. The technical challenges posed by implementing these tasks at scale are nontrivial, and require implementing a distributed bootstrapping methodology.

Work mainly on the development of a casual model of human judgement & decision-making that utilizes the techniques of Reinforcement Learning (the Q-learning), and explains why people make decisions, identifying key environmental or human constraints.

TECHNICAL STRENGTHS

Bayesian Modeling & Analysis	R, Rcpp, Nimble
High Performance Computing	OpenMP, MPI, CUDA, Amazon Cloud Computing, Cluster Computing at Penn State
Tools & Softwares	RShiny, L ^A T _E X, Linux, Github , SQL

ORAL PRESENTATIONS

Flexible Modeling of Spatial Extremes on Datasets with Many Locations		
<i>Joint Statistical Meetings</i> , Denver, CO		Aug 2019
<i>Workshop on Risk Analysis for Extremes in the Earth System</i> , Berkeley, CA		Jul 2019
<i>STATMOS Workshop on EVA with Applications in Oceanography</i> , San Diego, CA		May 2019
Hierarchical Scale Mixtures for Flexible Spatial Modeling		
<i>The 11th international conference on Extreme Value Analysis</i> , Zagreb, Croatia		Jun 2019
Scale Mixtures for Flexible Extremal Dependence Model		
<i>Joint Statistical Meetings</i> , Vancouver, BC		Aug 2018
Understanding the Impact of Streaming Quality of Experience (QoE) on User Behavior		
<i>SMAC Talk at Penn State</i> , State College, PA		Sep 2019

POSTER PRESENTATIONS

Hierarchical Scale Mixtures for Flexible Spatial Modeling		
<i>Workshop on Risk Analysis for Extremes in the Earth System</i> , Berkeley, CA		Jul 2019
<i>Rao Prize Conference at Penn State</i> , State College		May 2019

TEACHING EXPERIENCES

Teaching Assistant		
<i>Penn State Univerisity</i>		
Introduction in Probability Theory		Fall 2015
<i>Instructor</i> : Arkady Tempelman		
Analysis of Variance		Spring 2016
<i>Instructor</i> : Lynn Lin		
Advanced Statistical Inference I		Spring 2018
<i>Instructor</i> : Bing Li		
Elementary Statistics		Fall 2018
<i>Instructor</i> : Patricia Buchanan		
Probability and Stichastic Processes		Fall 2019
<i>Instructor</i> : Donald Richards		