

# SHIYU ZHANG

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## EDUCATION

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- TEMPLE UNIVERSITY, FOX SCHOOL OF BUSINESS** Philadelphia, PA  
• Ph.D. Program in Statistics *Aug. 2019 - Present*
- KANSAS STATE UNIVERSITY, Department of Statistics** Manhattan, KS  
• Ph.D. Program in Statistics *Aug. 2018 - May. 2019*
- LEHIGH UNIVERSITY, Department of Mathematics** Bethlehem, PA  
• Master of Science in Statistics *Aug. 2016 - May 2018*
- SICHUAN UNIVERSITY, Department of Economics** Chengdu, China  
• Bachelor of Economics in Financial Engineering *Sept. 2012 - June 2016*  
– Thesis: A Model Study of Statistical Arbitrage - Based on Constituent Shares of CSI 500  
• Minor in Law

## PROJECTS

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- Taxi Trip Destination and Duration Prediction** *Oct. 2018 - Dec. 2018*  
• Used Generalized Linear Models and Generalized Additive Models for both predictions, including Data cleaning, features analysis and extraction, etc.  
• Constructed a Brownian Motion Model to test the randomness of trajectories.
- Precipitation Prediction with Spatial Random Effect** *Sept. 2018 - Oct. 2018*  
• Constructed a Bayesian Hierarchical Linear Model with a spatial random effect.  
• Mathematical derivation of the full conditional distribution of parameter models.  
• Used Gibbs Sampling method and Metropolis-Hasting method to obtain the posterior distribution.
- Applied Bayesian Methods on Multi-Armed Bandits Problem** *Jul. 2018 - Aug. 2018*  
• Implemented Greedy and Epsilon-greedy algorithms.  
• Implemented the Thompson Sampling (via MCMC to estimate the posterior) and Upper Confidence Bound algorithms.
- A Classification Project for Porto Seguro's Safe Driver Prediction** *Feb. 2018 - Apr. 2018*  
• Data preprocessing: unbalanced data resampling, partition, imputation, and transformation.  
• Applied Decision Tree, Random Forest, Partial Least Squares, etc. ML models.  
• Data visualization via SAS EM.
- A Polynomial Projection Algorithm for Linear Programming** *Oct. 2017 - Dec. 2017*  
• Mathematically proved the performance of the polynomial projection algorithm.  
• Realized the polynomial projection algorithm. (MATLAB)

## PROFESSIONAL EXPERIENCE

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- A Searching Platform for Potential Clients Targeting** [*Data Analyst Intern*] Beijing, China  
*Data Center, China Everbright Bank* *May 2018 - Aug. 2018*  
• Implemented a web crawler to collect information of clients. (Python)  
• Implemented a search engine for CEB branches to target potential high quality clients. (SQL)  
• Data visualization via Tableau.

**Mathematical Derivations of Survival Analysis** [textitIndependent Research] Bethlehem, PA  
*Math Department, Lehigh University* Aug. 2017 - Dec. 2017

- Mathematical derivation of K-M estimator; Implemented Cox (PH) and AFT model. (R)
- Implemented Hotelling's  $T^2$ , Bonferroni, non-/parametric bootstrap methods. (R)

**Enterprise Risk Dynamic Decision System** [textitData Analyst Intern] Kunming, China  
*Yun Chen Futures CO., Ltd* June 2014 - Sept. 2014

- Collected Business data and Designed a dynamic analysis model.
- Applied GARCH, Multivariate Multiple Regression Analysis and Factor Analysis methods. (R)

**IPO Approval for Kang Hua Pharmaceutical Company** [textitFinance Intern] Chengdu, China  
*Industry Group, GF Securities* Jun. 2014 - Sept. 2014

- Coordination and communication between departments.
- Completed a market survey about Cordyceps.
- Collected intangible assets and intellectual property information of the company.

**Legal Consulting Services** [textitLaw Intern] Kunming, China  
*Yunnan Qianhe Law Office* Jun. 2013 - Sept. 2013

- Focused on Civil & Commercial Law, provided law consultation for customers; Drafted civil petition of appeal.

## SKILLS

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**Programming:** R, SAS, Python, SPSS, Matlab  
**Database:** MySQL, Microsoft SQL  
**Certificate:** SAS Certified Base/Advanced Programmer for SAS 9

## TEACHING EXPERIENCE

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**KANSAS STATE UNIVERSITY** Department of Statistics

- Graduate Teaching Assistant of STAT 325 (Introduction to Statistics).
- Grader of STAT 703 (Introduction to Statistical Methods for the Sciences).

**LEHIGH UNIVERSITY** Department of Mathematics

- Grader of Math 309 (Theory of Probability), Math 242 (Linear Algebra), and Math 21 (Calculus).