

# Shan Zhong

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## EDUCATION

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### University of South Carolina

*Doctor of Philosophy in Statistics, 3.6*

Columbia, SC

*Aug.2018 – Present*

### Columbia University

*Master of Science in Actuarial Science, 3.5*

New York, NY

*Jan.2017 – May.2018*

### Southern Utah University

*Bachelor of Science in Mathematics and Economics, Minor in Finance, 3.3*

Cedar City, UT

*Aug.2012 – Dec.2016*

## PREPRINTS

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Shan Zhong, & David B. Hitchcock. (2021). S&P 500 Stock Price Prediction Using Technical, Fundamental and Text Data.(submitted): <https://arxiv.org/abs/2108.10826v1>

## EXPERIENCE

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### Actuarial Consultant

*Yu Chun Business Consulting*

Jun 2019 – Sep 2019

*Shanghai, China*

- Automated web data scraping from all 91 life insurance companies that sell Critical Illness, health, and accident insurance products in China, via python Scrapy. Scraped over 20,000 products.
- Keywords extraction from insurance policy and health declaration documents, by regular expression and edit distance match, for automated underwriting.
- Product valuation in terms of net present value by age and gender, calculated by different actuarial assumptions.

### Research Assistant

*Guy Carpenter*

May 2017 – Aug 2017

*New York, NY*

- Developed Poisson regression models to predict actual claim count, with past 30 years of data. Calculated adjusted loss ratio volatility and correlation between 15 different lines of business, for 1400 companies.
- Drafted weekly research reports to present to chief actuary *Mr.Steve White*.
- Used SQL language to manipulate raw data and construct Access databases.

### Math Modeling Intern

*Casino Game Maker, Inc.*

Oct 2016 – Dec 2016

*Cedar City, UT*

- Evaluated winning strategy and game rules for different 52-deck card games and designed possible variants of rules and additional bonuses, via excel VBA decision tree simulation and conditional probabilities.

### Actuarial Intern

*New China Life Insurance Co., Ltd.*

Jun 2014 – Aug 2014

*Shanghai, China*

- Cleaned accident insurance premium data and summarized regional data. Health insurance underwriting.

## PROJECTS

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### University of South Carolina | *Python, R, Latex*

Aug 2018 – Present

- Functional data analysis for novel story data, cluster novels by regulated curves of emotion throughout the story.
- Built binomial hierarchical models to predict occurrence of smoking related disease and analyze societal economic cost of smoking. Ran the PCA and lasso variable selection models from a list of 2000 variables.
- Stock price prediction for 518 different stocks throughout the 20 year period with ensemble stacking machine learning model. Extracted Named Entity using embedding, and generated sentiment scores using the BERT model.

### Columbia University| *R, Excel*

Jan 2017 – May 2018

- Utilized a Bayesian stochastic membership model to cluster social media friendship network data. Via EM and MCMC.

## TECHNICAL SKILLS AND TEACHING EXPERIENCE

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**Languages and platform:** HPC, Python, R, Latex, tensorflow, sklearn, pandas, numpy, matplotlib

**Teaching:** Teach three sections of STAT 201 Lab, 24 people each. Write blog style statistical learning tutorial.