

# JINXIN(JASON) XIA

(336)918 8763 ◊ xiajinxin27@gmail.com ◊ Winston-Salem, NC ◊ <https://github.com/JinxinXia>

## EDUCATION & SELECTED AWARDS

---

Wake Forest University, Winston-Salem, NC, GPA:3.9/4.0	<i>Jan 2019 - Dec 2020</i>
Research Assistantship(NSF IIS-1741264), <i>DataFest<sup>TM</sup></i> 2019 <b>top 5%</b> team	<i>M.A. in Mathematical Statistics</i>
Colorado State University, Fort Collins, CO, GPA:3.8/4.0	<i>Aug 2015 - Aug 2018</i>
Global Association of Risk Professional Research Fellowship	<i>B.S. in Statistics &amp; Finance</i>

## SKILLS

---

**Theory** Machine Learning, A/B Test, Generalized Linear Models, Time Series, Statistical Inference, Optimization  
**Tech** Python(Advanced), SQL, R, AWS(Beginner), Git, Conda, Tableau, TensorFlow, PyTorch, scikit-learn

## RESEARCH EXPERIENCE

---

**National Science Foundation Grant Research Assistant (Algorithm, Optimization)** Feb 2019 - Present  
*Wake Forest University Math & Stats Department, Computer Science Department* *Winston-Salem, NC*

- Improved BFGS optimization algorithm speed **from**  $O(n^2)$  **to**  $O(n)$  with a significant decrease in storage requirement
- Using nonlinear line search and trust region optimization methods to search [fast matrix multiplication method](#)
- Mentoring two undergraduate computer science major students' research projects in tensor decomposition

**Statistician Intern (Paper Methods Implementation, Internal Library Building)** May 2019 - Aug 2019  
*Wake Forest University Biostatistics & Data Science Department Langefeld Lab* *Winston-Salem, NC*

- Developed a novel data anomalies elimination method for microbiome experiment data (paper in preparation)
- Implemented and compared batch anomalies elimination methods from papers from biostatistics journal
- The overall anomalies elimination success rate is **40% higher** than the ComBat, limma and Percentile Normalization

**Research Assistant (Data ETL pipeline, Natural Language Processing)** Aug 2017 - May 2018  
*Colorado State University Finance Department* *Fort Collins, CO*

- Built a **data ETL pipeline** with Python and SQL, extracting and transforming credit data from multiple data sources
- Applied sentiment analysis on credit rating analysts' reports using **naïve Bayes, Random Forest, and XGBoost**
- Found inconsistency among credit reports and credit rating, directly assisted mentor professor in his [paper](#)

## SELECTED PROJECT EXPERIENCE & TEACHING EXPERIENCE

---

**Superstore sales Time Series Analysis** Apr 2019

- Forecasted furniture sales data using time series models, decomposed data into trend, seasonality, and noise components
- Improved ARIMA model predicted sales accuracy by using grid search method with AIC as metric
- Revealed daily, weekly and yearly patterns of the overall forecasted values using Python library Prophet
- Found leading and lagging indicators to furniture sales as reference metrics to validate predicted furniture sales value

**Fast Matrices multiplication using Gauss-Newton Optimization algorithm** Jun 2020

- Found solutions of fast matrices multiplication coefficients in 2 by 2 and 3 by 3 modes
- Developed Jacobian computing, tensor permuting, and tensor Gauss-Newton algorithms for tensor objective functions

**Lead Teaching Assistant** Jan 2020 - Present

*Wake Forest University Math & Stats Center*

- Lead teaching assistant at Math & Stats center, on call TA after Mar 2020, mentored new teaching assistants
- Held weekly study sessions, and occasionally gave lectures on study sessions with more 20 students in the session
- Teaching assistant for STA611 Stats Inference, CS652 Numerical Linear Algebra, MST655 Numerical Methods