Jeffrey Mei — Resume

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Education

University of Arizona **Tucson, AZ**
PhD in Statistics and Data Science *August 2022 – Present*
- Minor: Systems Industrial Engineering
- Research Area: Correlation Estimation in the Presence of Change Points

University of Nevada, Reno **Reno, NV**
BS in Mathematics *August 2012 – May 2016*
- Minors: Computer Science, Physics

Work and Research Experience

University of Arizona **Tucson, AZ**
Graduate Research Assistant *August 2022 – Present*
- Developed method for estimating cross-sectional correlation in the presence of change points
- Implemented novel algorithms for change point detection in R
- Conducted simulations in R to analyze estimators in various scenarios
- Wrote technical reports detailing simulation results, mathematical results, and numerical analyses
- Organized department journal seminars covering topics in machine learning

Critical Path Institute **Tucson, AZ**
Quantitative Medicine Scientist Intern *May 2024 – August 2024*
- Built R package for automatically incorporating disease models into clinical trial simulations using Shiny
- Designed scaleable and flexible "grammar of clinical trial simulations" that pairs typical tasks in clinical trials to corresponding UI elements
- Collaborated with team members through GitLab
- Incorporated unit tests into CI/CD pipeline to improve software quality

Allegiant Airlines **Las Vegas, NV**
Operations Research Analyst *May 2019 – August 2022*
- Developed tools in Python and VBA to automate tasks to improve efficiency of other departments
- Simulated customer boarding procedures leading to company-wide adoption of new boarding strategy
- Developed Python tool for optimizing fare prices
- Wrote reports modeling how policy decisions could affect staffing operations
- Migrated flight schedule conflict tool from VBA to AWS Python
- Updated and maintained VBA tool for assigning schedules to flight attendants and pilots
- Conducted A/B testing on discount initiative and analyzed results using SQL and Python

University of Nevada, Reno **Reno, NV**
Graduate Research Assistant *August 2016 – August 2019*
- Developed probability models for power system reliability
- Extended reliability model to incorporate spatiotemporal correlation
- Developed novel stochastically ordered estimators
- Conducted simulations in R to compare new estimators against alternatives

University of Nevada, Reno **Reno, NV**
Undergraduate Research Assistant *September 2015 – May 2016*
- Thesis: *Estimating Survival Functions in the Case of Three or More Stochastically Ordered Populations*
- Developed estimator that generalizes a stochastically ordered estimator for multiple populations
- Conducted simulations in R to study the performance of the new generalized estimator

Summer Institute of Biostatistics **Pittsburgh, PA**
Undergraduate Research Assistant *June 2015 – August 2015*

- Investigated the link between genes and dental cavities by analyzing the genes' Hardy-Weinberg equilibrium
- Developed Stata program to study Hardy-Weinberg equilibrium of cavity genes
- Presented summer research in *Studying Racial, Gender, and Environmental Effects on Hardy-Weinberg Equilibrium of Multiple Genes Associated with Dental Caries*

University of Nevada, Reno **Reno, NV**
Undergraduate Research Assistant *January 2013 – May 2015*

- Coauthored the paper *Significant change in threshold for plasma formation and evolution with small variation in copper alloys driven by a mega-ampere current pulse* in the journal *Physics of Plasmas*
- Developed software tools in Java to automate image analysis accurately
- Assisted in collecting data during experimental campaigns, building equipment, and carefully documenting materials prior to experiments
- Presented the poster, *Developing Software Tools to Analyze Plasma Expansion*, at the American Physical Society Far-West Conference and at the 2014 College of Science Poster Conference

Research for Undergraduates Summer Institute of Statistics **Reno, NV**
Undergraduate Research Assistant *May 2014 – August 2014*

- Developed an algorithm and probability model to assess the reliability of a power distribution system
- Implemented probability model in R to study the model with respect to varying parameters
- Synthesized summer results in technical report *Analysis of Power Distribution System Reliability*
- Presented summer research results to invited statistics panel
- Presented the poster *Analysis of Power Distribution System Reliability* at the 2014 Society for the Advancement of Chicanos/Hispanics and Native Americans in Science conference and at the 2014 College of Science Poster Competition

Research for Undergraduates Summer Institute of Statistics **Oregon State University**
Teaching Assistant *June 2018 – August 2018*

- Taught month-long course covering a traditional 2-semester treatment of probability and statistics
- Mentored students with undergraduate research projects, and assisted in debugging R code

Research for Undergraduates Summer Institute of Statistics **Oregon State University**
Teaching Assistant *June 2017 – August 2017*

- Taught month-long R programming course (topics include: basic programming, vectorization, parallel computing, running simulations)
- Introduced LaTex typesetting, Beamer, and R Markdown
- Mentored students with undergraduate research projects, and assisted in debugging R code

Research for Undergraduates Summer Institute of Statistics **University of Nevada, Reno**
Undergraduate Teaching Assistant *May 2016 – August 2016*

- Mentored students with undergraduate research projects, and assisted in debugging R code
- Conducted a LaTex and Beamer workshop to introduce students to typesetting

Technical Skills

Programming Languages: R, Python, SQL, VBA, C++, Java, SAS, Stata
Tools: Git, Linux, Docker, AWS (Lambda, EC2, S3), Markdown, Jupyter Notebooks
Modeling: linear regression, logistic regression, linear discriminant analysis, support vector machines, artificial neural networks, random forest, k-means clustering