Joe Zemmels

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Education

Iowa State University — Ames, IA
PhD. Student in Statistics — *Aug. 2018 – Present*

Iowa State University — Ames, IA
Master of Science in Statistics — *May 2020*

Winona State University — Winona, MN
Bachelor of Science in Honors Mathematics & Mathematics: Secondary Education — *Dec. 2017*

Experience

Graduate Research Assistant — Jan. 2020 – Present
Center for Statistics and Applications in Forensic Evidence | Website — *Ames, IA*
- Devise and implement computational methods for performing firearm evidence identification
- Create and maintain open-source resources for forensic statistics researchers
- Develop materials for a Statistics for Forensic Practitioners online course

Graduate Instructor — Aug. 2019 – Dec. 2019
Iowa State University Department of Statistics — *Ames, IA*
- Taught an undergraduate Introduction to Business Statistics course
- Facilitated student learning by applying best educational practices to lesson and assessment development

Data Analytics Intern — June 2019 – Aug. 2019
John Deere — *Moline, IL*
- Formulated and assessed time series models for forecasting machine usage
- Identified data errors and anomalies across multiple data sources to improve forecast robustness
- Collaborated with Data Scientists and Data Engineers to turn analyses into actionable insights

Graduate Teaching Assistant — Aug. 2018 – May 2019
Iowa State University Department of Statistics — *Ames, IA*
- Led weekly review and enrichment labs for undergraduate introductory statistics courses
- Performed grading duties for introductory statistics and business statistics courses

Projects

cmcR | *R, TravisCI, Git* | Package Website | Presentation Slides — May 2019 – Present
- Implement a cartridge case identification method known as the Congruent Matching Cells method
- Develop an open-source R package of implementation using package development best practices
- Demonstrate validity of implementation by comparing to closed-source published results

Bayesian analysis of float glass data | *R, RMarkdown, RStan* | Website — April 2020
- Analyzed data of the chemical composition of float glass for a final project in a Bayesian statistics course
- Leveraged data tools such as the Tidyverse and Bayesian statistical packages such as RStan

statsfoRstudents | *R, R Shiny, Git* | App Website — April 2019
- Created a package and R Shiny app to assist undergraduates in understanding statistics concepts
- Collaborated with other statistics course instructors using GitHub to develop package

Professional Interests

Pattern recognition, Forensic statistics, Open-source development, Reproducibility, Image processing, Data science, Data visualization, Time series modeling, Machine learning, Statistics education

Technical Skills

Languages: R, Python
Developer Tools: RStudio, Git, TravisCI, Apache Spark (Databricks)
Libraries: Tidyverse (ggplot2, dplyr, purrr, tidyr), R Shiny, NumPy, pandas