Nicholas S. Berry, PhD

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Education

- **Iowa State University** — Ames, IA
  PhD Statistics (earned 2019) & MS Statistics (earned 2016) — *2013 - 2019*
  - Dissertation: *Extending K-means*
  - Research in unsupervised learning, especially clustering, as well as graphical models, including Dynamic Bayesian Networks and Gaussian Graphical Models.
  - Committee: Dr. Ranjan Maitra (advisor), Dr. Alicia Carriquiry, Dr. William Meeker, Dr. Dan Nettleton, Dr. Vivekananda Roy
- **Texas A&M University** — College Station, TX
  BS Applied Mathematics, emphasis in Statistics — *2009 - 2013*

Research Experience

- **Iowa State University** — Ames, IA
  Center for Statistics and Applications in Forensic Evidence — *Fall 2017 - Spring 2019*
  - Automatic Forensic Analysis of Handwriting and Questioned Documents
  - https://github.com/CSAFE-ISU/handwriter
- **MD Anderson Cancer Center** — Houston, TX
  Graduate Researcher under Drs. Min Jin Ha and Kim-Ahn Do — *Summer 2017*
  - Created pipeline for analysis of underlying graph structures for microbiome data
  - Estimation and differential network analysis for sub-group specific microbiome data
- **Iowa State University** — Ames, IA
  Graduate Researcher under Dr. George Amariucai — *Fall 2015 - Spring 2017*
  - Continuous Biometric Authentication via Dynamic Bayesian Networks
  - Eliminating positive feedback for connected authenticating devices

Teaching Experience

- **Instructor** — Iowa State University, Ames, IA
  - Stat 104: (Introduction to Statistics): Fall 2014, Spring 2015, Fall 2015
- **Co-Instructor** — Iowa State University, Ames, IA

  - Stat 444: (Bayesian Data Analysis): Spring 2018

- **Grader / Lab Instructor** — Iowa State University, Ames, IA
  - Stat 401 (Stat. Methods for Research): Summer 2015
  - Stat 101 (Principles of Statistics): Fall 2013, Spring 2014, Summer 2014

- **Graduate Teaching Award** — Iowa State University, *April 2016*

Skills

- **Statistics**
  - Advanced statistical methods, including spatial, time series, advanced likelihood topics, and Bayesian inference
  - Statistical Computing (in R & C) – Advanced MCMC methods, clustering algorithms
  - Measure & Probability Theory
- **Programming/Software**
  - Fluent in R, C, C++
  - Extensive use of Python, Java, and SAS
  - Broad understanding of data structures and algorithms
  - Proficient with LaTeX, the tidyverse, git, and dynamic document creation

Presentations

- **Joint Statistical Meetings** — Vancouver, BC, Canada, *August 2018*
  - TiK-means: A Transformation Infused K-means Algorithm for Skewed Groups
- **Graphics Working Group** — Iowa State University, *March 2018*
  - Information Extraction for Handwritten Text
- **Joint Statistical Meetings** — Baltimore, MD, *August 2017*
  - Variable Selection in K-means Clustering
- **Digital Forensics Workshop** — Washington D.C., *May 2017*
  - Continuous Biometric Authentication and Sequential Updating of Beliefs
- **Statistical Learning Working Group** — Iowa State University, *October 2016*
  - Continuous Authentication in Challenging Environments via Dynamic Bayesian Networks