NEIL DEY

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EDUCATION

North Carolina State University **GPA: 4.0**
PhD Candidate in Statistics *Expected Graduation: Summer 2025*

- Relevant Electives: Stochastic Processes, Categorical Data Analysis, High Dimensional Data Analysis, Imprecise Probability

North Carolina State University **GPA: 4.0**
B.S. in Computer Science & Mathematics (with Honors) *2017—2020*

PEER-REVIEWED PUBLICATIONS

- **Neil Dey**, Ryan Martin, and Jonathan P. Williams. Anytime-Valid Generalized Universal Inference on Risk Minimizers. *In Review*, 2024+.
- **Neil Dey** and Jonathan P. Williams. Valid Inference for Machine Learning Model Parameters. *In Review*, 2023+.
- **Neil Dey**, Matthew D. Singer, Srijan Sengupta, and Jonathan P. Williams. Word Embeddings as Statistical Estimators. *To appear in Shankya B*, 2024.
- **Neil Dey**, Jing Ding, Jack Ferrell, Carolina Kapper, Maxwell Lovig, Emiliano Planchon, and Jonathan P. Williams. Conformal Prediction for Text Infilling and Part-of-Speech Prediction. *New England Journal of Statistics in Data Science*, October 2022.
- Jason A. Osborne, Melody Wen, and **Neil Dey**. MLBDecideR: A Shiny App for Baseball. *Notices of the American Mathematical Society*, October 2020.

POSTER PRESENTATIONS

- Valid Inference for Machine Learning Model Parameters. *Joint Statistical Meetings*, University of Toronto, August 2023.
- Valid Inference for Machine Learning Model Parameters. *Eighth Bayesian, Frequentist, and Fiducial Conference*, University of Cincinnati, May 2023.
- Missing Values Singular Value Decomposition for Approximating Word2Vec Factorization of Pointwise Mutual Information. *Seventh Bayesian, Frequentist, and Fiducial Conference*, University of Toronto, May 2022.

INDUSTRY EXPERIENCE

Amazon (Personalization) | Applied Scientist Internship *Irvine, CA* *June 2021 – August 2021*

- Designed and implemented a Bayesian model to predict media consumption behavior of individual Amazon customers
  - Final model performed over 30% more accurately than existing proprietary methods for behavior prediction
  - Gathered and analyzed training data using SQL; implemented model in TensorFlow 2 for Python 3.

Boeing | Data Science Internship *Seattle, WA* *June 2020 – August 2020*

- Implemented a computer vision model to track assembly line progress in Boeing factories
  - Created a Faster R-CNN in Python 3 using the Object Detection API of TensorFlow 1 to track airplane parts (e.g. AFT staircases) in factories and determine when key stages in 737 midsection assembly are completed
  - Received training in convolutional neural network construction in TensorFlow 2

Amazon (AWS) | Software Engineering Internship *Seattle, WA* *June 2019 – August 2019*

- Architected and implemented a service to manage AWS accounts used for integration testing
  - Created APIs for engineers to add and remove accounts from a DynamoDB datastore used to track accounts
  - Created APIs for integration tests to borrow and return accounts, preventing conflicts between different teams' tests
  - Implemented automatic cleanup using AWS Lambda and Cloudwatch; implemented metrics to be logged in Cloudwatch
  - Microservice written fully in Java, using the AWS SDK and Amazon's SOA framework

Cengage (WebAssign) | Software Engineering Internship *Raleigh, NC* *June 2018 – August 2018*

- Worked as a full-stack web developer, creating a single page web application tracking metrics regarding the WebAssign platform
  - Views included a heatmap showing current users on the platform, a risk assessment tool determining when it is safe to deploy, and a visualization of current HTTP errors and response times
  - Technology Stack: React, Node, LESS; Java, Spring-Boot, JDBC (MySQL), Dynatrace; Jenkins, JUnit, and Enzyme

AWARDS

- William Mendenhall Graduate Award for Excellence in Teaching of Statistics *2024*
- B.B. Bhattacharyya Graduate Fund for Excellence Award *2022*
- Nominated for Outstanding Teaching Assistant Award *2022*
- Provost's Doctoral Fellowship *2020*

- Meritorious winner of COMAP MCM competition *2019*
- Meritorious winner of COMAP MCM competition *2018*
- Park Scholarship *2017*

TEACHING AND ADVISING

Courses Taught:

- Introduction to Statistics (undergraduate; ST311 NCSU) *Fall 2023, Spring 2024*
- Statistics Qualifying Exam Bootcamp (graduate; NCSU) *Summer 2022*

Teaching Assistantships

- Experimental Statistics for Engineers II (graduate; ST516 NCSU) *Spring 2023*
- Statistical Learning and Data Analytics (undergraduate; ST495 NCSU) *Fall 2021*
- Fundamentals of Statistical Inference II (graduate; ST502 NCSU) *Fall 2021*
- Mathematical Analysis I (undergraduate; MA425 NCSU) *Spring 2019*

Mentoring

- Graduate mentor DRUMS Research Experience for Undergrads (REU) *Summer 2021*

COMPUTING EXPERIENCE

Java, Python, C, Julia, JavaScript, C++, R, Matlab, Mathematica, Scala, SAS, x86 assembly, NetLogo