NEIL DEY

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EDUCATION

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

- Honors and Awards: Provost's Doctoral Fellowship
- Relevant Elective Coursework: Stochastic Processes, Categorical Data Analysis, High Dimensional Data Analysis

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

- Honors and Awards: Park Scholarship

RELEVANT EXPERIENCE

Peer-Reviewed Publications

- **Neil Dey,** Emmett Kendall. Robust Coordinate Ascent Variational Inference with Markov Chain Monte Carlo Simulations. *In Review*, 2021+.
- **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. *In Review*, 2021+.
- Jason A. Osborne, Melody Wen, and **Neil Dey**. MLBDecideR: A Shiny App for Baseball. *Notices of the American Mathematical Society*, October 2020.

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

Other Experience *August 2018 – Present*

- Used React gamify the machine learning data labelling system of the Lab of Analytic Sciences (in partnership with the NSA)
- Used Python in the 2019 COMAP MCM competition to predict future sources and the spread of opiates in the east coast
  - Final paper: https://drive.google.com/open?id=1n4iMeB3lgrO_G2XZnCnGnq23KguI55TV
  - Recognized as a meritorious winner
- Used Python and NetLogo in the 2018 COMAP MCM competition to model network dynamics of infrastructure for electric cars
  - Final paper: https://drive.google.com/open?id=1C4qE2Q8T71FH9MlQoCr08t5pQ0jnWl1b
  - GitHub repository: https://github.com/neil-dey/MCM2018
  - Recognized as a meritorious winner
- Acted as graduate mentor for undergraduate math majors during DRUMS 2021 Research Experience for Undergrads (REU).
- Programming experience in Java, Python, C, Julia, JavaScript, C++, R, Matlab, Mathematica, Scala, SAS, x86 assembly, NetLogo