

# Bryce E. Bowles

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Sample Work  
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## Summary

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Accomplished Data Scientist with expertise in developing and implementing high-quality predictive and explanatory models using machine learning and statistical inference. Proven track record in leading cross-functional teams, driving impactful projects, and optimizing complex business processes. Demonstrates advanced analytical capabilities and a commitment to continuous learning and professional growth.

## Education

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Master of Decision Analytics (M.D.A.), 4.0 GPA *December 2021*  
Virginia Commonwealth University, Richmond, VA

- Relevant coursework: ML, Statistical Modeling, Optimization, Decision & Risk Analytics
- Phi Kappa Phi Honor Society ( $\Phi\K\Phi$ ) member

B.S. in Business Administration (B.S.B.A) *May 2017*  
East Carolina University, Greenville, NC

## Work Experience

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**Data Scientist** (Data Science Specialist) *July 2022 - Present*  
NewMarket Corporation - Richmond, VA

- Research, develop and implement high-quality predictive and explanatory models with machine learning and statistical methods to optimize fluid formulations.
- Designed key diagnostic and evaluation metrics, driving discoveries and advancements for predictive modeling resulting in increased accuracy, precision and reduced costs.
- Lead cross-functional teams and collaborate with business partners to design and implement machine learning models addressing complex business problems.
- Guide team members through training and mentorship, ensuring project excellence and encouraging professional growth.

**Business Systems Analyst** (Senior Automated Systems Analyst) *June 2017 – July 2022*  
Virginia State Corporation Commission (SCC) - Richmond, VA

- Led multiple projects involving information systems and analytical tasks.
- Conducted advanced descriptive, statistical, and business intelligence analyses to solve complex business problems.
- Implemented an email mailing system, reducing costs and saving hundreds of work hours per year.

## Professional Accomplishments

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**Driveline Predictive Models** (*NewMarket Corporation*) *May – August 2023*

- Successfully led a team of three data scientists to develop eight predictive models resulting in 12% overall increase in accuracy. These initiatives lead to substantial cost savings, waste reduction, resource efficiency and improved precision.

**NewMarket Corporation Data Science Mentor (NewMarket Corporation)***May – August 2023*

- Mentored and developed Data Operations' inaugural intern, contributing to the enhancement of their skills and delivering impactful predictive models.

**Sample Projects (NewMarket Corporation)**

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Project Name: DW Cary Fleet Trial

*February 2024*

- Conducted statistical analyses and used techniques like PCA, stepwise models and categorical least squares means to optimize parameters in a project comparing fuel performance.
- Studied four pairs of trucks, considering factors like engine speed and load. Employed a technique to avoid human bias and ensure objectivity. Results were presented to the marketing team for strategic customer communication.

Project Name: Oxidation Characteristics of Inhibited Mineral Oils

*April 2023*

- Developed a quantile regression forest predictive model, including 80% prediction intervals, for Afton's R&D CTS section. Trained and deployed a final model into a robust production RShiny application, enabling end users/formulators to predict outcomes and assess formula accuracy and precision. Validated the (ASTM D943) model under multiple scenarios, comparing with GLM, Gaussian Process models, Principal Component regression, and Lasso regression.

Project Name: FZG A10/16.6R/90 Scuffing Failure Load Stage Model

*November 2022*

- Developed a precise and accurate Random Forest predictive model to predict a driveline test (FZG Scuffing Failure Load Stage). Achieved a 26.22% increase in prediction accuracy above the No Information Rate (NIR) and improved precision (RMSE). Deployed the model to Afton's Formulator Tool Kit, enhancing product development for the "Driveline" business unit.

**Skills**

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- Machine Learning algorithms, Statistical Inference, Regression, Classification, Clustering, Feature Engineering, Sensitivity Analysis etc.
- Machine Learning tools and frameworks: R, Caret, Keras, TensorFlow, h2o, .jmp
- Data Wrangling: R, SQL, Excel– Data manipulation skills
- Visualization: R, .jmp, Shiny, MS Power BI

**Awards and Extracurricular Activities**

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Volunteer: NewMarket United Way Committee

*May 2023-Present*

- Collaboratively assisted in the planning and execution of NewMarket's United Way day, contributing to the organization's philanthropic efforts.

SCC Information Technology Committee Working Groups, Elected member

*May 2019- July 2022*

- Advanced contributions to Data Analytics and Communication working groups, improving analytics systems and technology newsletters.

The Honor Society of Phi Kappa Phi (ΦΚΦ)

VCU - Richmond, VA

- Inducted Member November 2021