

Bryce E. Bowles

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Sample Work
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Summary

Results-driven data scientist with expertise in machine learning and statistical analysis. Proven track record of leading cross-functional teams to drive impactful solutions in the development of prediction and inference models for manufacturing petroleum additives. Committed to continuous learning and driving business innovation through data-driven insights."

Education

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 (ΦΚΦ) member

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

Work Experience

Data Scientist (Data Science Specialist) *July 2022 - Present*

NewMarket Corporation - Richmond, VA

- Employ machine learning and statistical methodologies to optimize fluid formulations, resulting in enhanced accuracy and cost reduction.
- Established key diagnostic and evaluation metrics, such as model performance indicators and validation criteria, to drive discoveries and advancements in predictive and explanatory modeling.
- Lead cross-functional teams in tackling intricate business challenges through the implementation of innovative machine learning initiatives.
- Provide comprehensive training and mentorship to drive team members' professional growth and project excellence.

Business Systems Analyst (Senior Automated Systems Analyst) *June 2017 – July 2022*

Virginia State Corporation Commission (SCC) - Richmond, VA

- Orchestrated multiple information system projects, leveraging statistical analyses to address business needs.
- Implemented an emailing API system, streamlining operations and yielding significant cost savings.
- Administered new system implementation and led critical projects.
- Led pivotal projects in system integration and security enhancements for consumer protection.
- Demonstrated consistent performance and dedication, leading to promotions from Associate to Systems Analyst and eventually to Senior Automated Systems Analyst.

Professional Accomplishments

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

- Successfully led a team of three data scientists to develop eight Driveline predictive models resulting in 12% overall increase in accuracy, substantial cost savings, resource efficiency and

improved precision.

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

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

Sample Projects (NewMarket Corporation)

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

- 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

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) Inductee, November 2021**VCU - Richmond, VA**