Bryan **Crigger**

Data Scientist

Nashville, TN 37204

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Skills

Programming	Python, SQL, R, Ruby
Packages	Numpy, Sklearn, Keras, TensorFlow, Pandas, Matplotlib, Plotly
Tools	VSCode, Github, Colab, AWS, Jupyter Notebooks, Snowflake, Docker, Jira, Guru, DbVisualizer, Tableau
Data Science	Supervised Learning (Naive Bayes, Linear/Logistic Regression, Decision Trees and Forests, Support Vector Machines, Gradient Boosting), Unsupervised Learning (K-means, Principal Component Analysis (PCA)), A/B Testing, Time Series
Deep Learning	Convolutional Neural Networks (CNN), Reinforcement Learning (RL), Long Short Term Networks (LSTM), Autoencoders

Education

Syracuse University — *Nashville, TN*

M.S. in Applied Data Science, **GPA:** 3.91 | **Portfolio** — *2021 - 2024*

Xavier University — *Cincinnati, OH*

B.A. in Mathematics, Minor in Statistics and Information Systems, **GPA:** 3.3 — *2015 - 2019*

Employment

Springbuk — *Indianapolis, IN (Remote)*

Healthcare Data Analyst — *Jul 2021 - Present*

- Lead a team of 4 analysts in identifying and creating new python data quality checks, to proactively find and fix anomalies, resulting in an increase of 30% more internal reported tickets that were previously externally reported.
- Creating an automated data mapping process which will allow new data vendors to have their data feeds setup much easier and faster, potentially decreasing data mapping time by 10x.
- Oversee documentation and documentation best practices for 4 teams within the Data Management Department, improving content trust scores from 85% to 97%.
- Co-chair of the Knowledge Governance Council, improving technical documentation best practices and standards.
- Design, develop, optimize, and maintain data architecture and data pipelines, adhering to ETL principles and business goals.
- Build and maintain data quality checks to proactively identify and resolve issues within customers' data for over 60 data sources.
- Participated in a 6-month Emerging Leaders Program, learning and discussing key skills required to be an effective leader.

Bridgestone Americas — *Nashville, TN*

Data Scientist — *Jun 2019 - Jul 2021*

- Led and established A/B Testing standards, best practices, and training within Bridgestone's retail division (BSRO) and the broader organization.
- Designed a customer segmentation analysis using K-Means clustering, to allow marketing to better understand and cater to different types of consumers.
- Built various ad-hoc Machine Learning models using cloud databases and GitHub version control to effectively drive multi-million-dollar initiatives.
- Managed the end-to-end process of A/B tests, identify over $300M in incremental revenue and cost avoidance annually.
- Supported Marketing, Supply Chain, and Sustainability in identifying opportunity markets and optimal roll out strategy.

Projects | Research

Pistachio Image Classification GitHub

Deep Learning in Practice (class) Project

- Used Convolutional Neural Networks (CNNs) to classify pistachio species (Kirmizi and Siirt), processing over 2,000 images, and achieving a high accuracy of 96.31%.
- Utilized various data prep techniques including data balancing through oversampling and undersampling, and Keras' ImageDataGenerator to augment image data in real-time to generate additional training data.
- Leveraged transfer learning with EfficientNetB0 as the foundational model, fine-tuning it for specific application to pistachio image classification. Iteratively tested different model variations, including dropout layers and different dense layer configurations, to optimize performance.
- Conducted comprehensive performance analysis using TensorBoard to compare model performance for various iterations. Fine-tuned the model by unfreezing various layers, identifying the optimal configuration for maximum classification accuracy, achieving F1 scores of 61% and 46% for Kirmizi and Siirt, respectively.

U.S. Opioid Prescriber Analysis GitHub

Applied Machine Learning (class) Project

- Analyzed over 23 million records from the Centers for Medicare & Medicaid Services to identify patterns in opioid prescribing. Employed Association Rule Mining, Clustering, and Classification Algorithms to classify and evaluate opioid prescribers.
- Utilized R for data analysis, focusing on prescriber information, specialty types, and frequency of opioid prescriptions. Identified top opioid-prescribing specialties and highlighting regional trends in the Southern United States.
- Conducted KMeans Clustering to categorize prescribers based on prescribing behaviors, using Silhouette plots for optimal cluster determination. Implemented Naive Bayes model to calculate conditional probabilities by state, identifying states with higher likelihoods of opioid prescribing.
- Revealed significant findings such as the prevalence of opioid prescribing in specific medical specialties and states, underlining the need for enhanced monitoring and rehabilitation access in high-risk areas. Acknowledged the impact of socio-economic factors like poverty, race, and education on opioid prescriptions and overdoses, emphasizing the complexity of the opioid crisis.

Classifying Spam vs. Non-Spam Emails with NLP GitHub

Natural Language Processing (class) Project

- Developed a framework with python to classify emails from the Enron corpus as either spam or non-spam, using NLTK for text processing and sklearn for modeling.
- Explored various features like word frequency, sentiment analysis, and n-grams to further understand and clean the data.
- Experimented with different Naive Bayes classifiers (Gaussian, Multinomial, Bernoulli), calculating precision, recall, and F1 scores for each to evaluate and fine-tune the models. Achieved classification accuracy of 87.98% with Multinomial Naive Bayes, however ultimately choosing a Bernoulli model as it was for generalization.

Extracurricular Activity

Second Harvest Food Bank

Nashville, TN

Friends of the Food Bank, Volunteer

Jun 2020 - Present

- Volunteer 1-2 times a month, helping to sort and pack food to help provide food to people facing hunger and work to alleviate hunger issues within the Greater Nashville area.