

# BRIAN KEITH

## DATA SCIENCE MANAGER

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Brian Keith joined the Atlanta office of B. Riley Advisory Services as a Data Scientist in 2022 bringing with him four years of experience in the Pulp & Paper and Mining industries, specializing in process optimization, modeling, and the development of Python-based analytics tools. At B. Riley Advisory Services, Brian manages the firms “big data” engagements, guides advanced analytics, and develops algorithms for complex datasets.

Due to the broad areas where Brian’s expertise can assist clients, he has worked on a wide range of matters during his time thus far at B. Riley Advisory Services. However, some highlights of Brian's engagement experience include the following:

- Expert services related to sampling methodologies and algorithm development for classification of warranty replacements in a class action lawsuit related to a large retailer. The scope of Brian's work was to create a reliable sampling methodology to critique an opposing expert's damages claims as well as his ability to match damaged transactions.
- Multiple cases for one of the largest commercial shipping companies in the world, related to a damage dispute regarding package weights and billing charges. In one of these cases, Brian analyzed shipment data to determine the validity of the disputes as well as the actual damages due to under-manifested package weights. In another, Brian developed various classification algorithms to determine the validity of the claims against the shipping company.
- Multiple data breach cases including one pertaining to a data breach for a healthcare billing company in which over 51 billion datapoints related to PHI and PII were leaked. This matter involved database reconstruction and creating a consolidated mapping and analysis to determine the class as well as the information exposed to allow B. Riley’s other experts to assess the damage caused by the breach.
- Assisting to determine damages related to a large payment authentication company being accused of the unlawful storage and selling of user financial data without consent which involves hundreds of millions of records and tens of millions of individuals.
- Fraud investigation related to fake trades on treasury bonds that resulted in overexposed positions. During the case, data structures had to be created and modified from multiple sources including clearing houses to determine matched and unmatched trades to be able to determine the client’s real net exposure created by these fake trades.
- Development of various statical sampling methods including monetary unit sampling methodology to determine damages associated with lost profits for a medical billing dispute and claim sampling for a nation health insurance provider.
- Breach of contract disputes related to a large retailer of aftermarket car parts. For this case, Brian developed algorithms to follow transactions all the way through the sales chain from various sources and perform statistical analysis to prove the Plaintiff’s claims.
- Modeling and upkeep of data related to over \$1 billion worth of cumulatively purchased receivables for B. Riley Financial.

Brian is fluent in Python, R, and SQL, with a working knowledge of JavaScript, HTML, and VBA. His skill set includes advanced techniques in web scraping, computer vision, and machine learning, applied to tackle complex data challenges. He holds a BS in Chemical Engineering from Auburn University and is currently advancing his expertise through a MS in Data Analytics at Georgia Tech.

### Specialties:

Database Management  
Statistical Modeling  
Root Cause Analysis  
Time Series Forecasting  
Data Extraction  
Data Aggregation  
Data Visualization

### Industries:

Manufacturing  
Consumer Products  
Retail  
Insurance  
Hospitality  
Technology Services  
Software