

# Voltaiq Analytics Studio

Battery data science, modeling, and algorithm development, using your own data, in Python or MATLAB\*

## KEY BENEFITS



### Custom analysis

Build and run your own proprietary analyses against any data in your Voltaiq system



### Your own data

Prototype predictive machine learning algorithms, perform large-scale statistical studies, validate your models against real battery performance data



### Generate valuable IP

Voltaiq provides the environment, you develop and own the intellectual property

## USE CASES

- Develop new state-of-charge (SOC) and state-of-health (SOH) models
- Prototype battery management system (BMS) algorithms
- Evaluate and adapt machine learning (ML) and artificial intelligence (AI) models for battery performance and lifetime
- Perform large-scale statistical analysis across production batches or product generations
- Prototype and productionize custom battery metrics and KPIs
- Develop custom visualizations and reports to meet your organization's needs

## Batteries are a data science problem

Engineering batteries and battery systems for optimal performance, reliability, and safety is increasingly a data science problem. In this fast-moving industry, you don't have time to waste searching for data, getting it into a common format, or setting up a custom computing environment with the power to deliver actionable insights.

To iterate quickly and reach your goals, you need the agility that comes with having the right data at your fingertips, with the data science tools to turn that data into valuable intellectual property and competitive advantage.



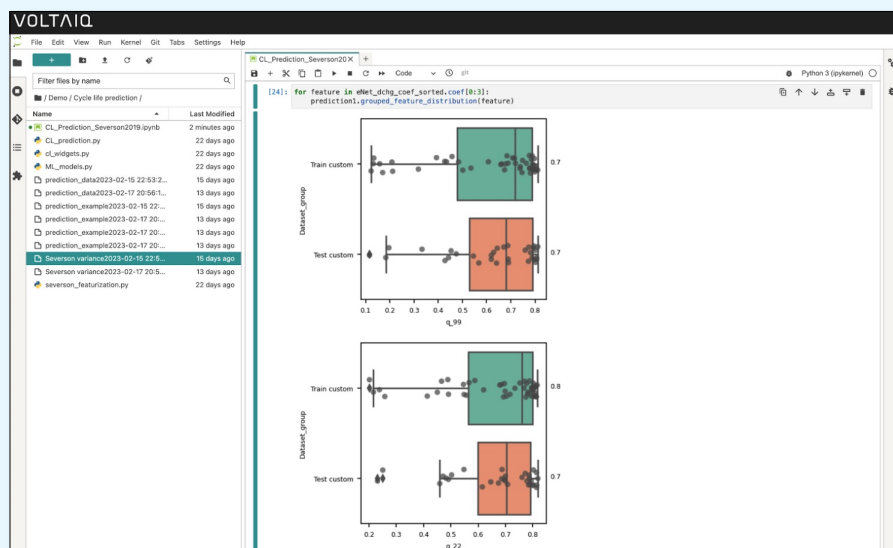
## The premier environment for battery data science

Voltaiq Analytics Studio is the premier environment for battery data science, modeling, and algorithm development. Built on the Voltaiq Platform, this solution offers direct access to the full set of your organization's cleaned, labeled, structured battery data, with browser-based "notebooks" for developing and executing analysis code in Python or MATLAB. With Voltaiq Analytics Studio, your team can write its own analyses, experiment with novel visualizations, and develop valuable intellectual property using your own battery data.

## Built on the Voltaiq Platform

When taking on a large-scale data science or data analysis project, the first, and often largest, challenge is simply getting enough relevant data in a common, structured format, and in an environment where you can analyze it effectively. Voltaiq Analytics Studio eliminates these headaches by leveraging the enterprise-scale data automation built into the Voltaiq Platform — battery data from any source is automatically collected, cleaned, harmonized, labeled, and analyzed to extract dozens of additional vital battery data streams and performance metrics.

With Voltaiq Analytics Studio, all of your organization's battery performance data and metadata is instantly accessible, along with the full set of powerful data science, visualization, and numerical computing libraries currently in use across the global data science community.



## PRODUCT FEATURES

### Interactive notebooks

Develop and run your own custom analyses

### Python and MATLAB support

Work in the language you're comfortable with

### GitHub integration

Evaluate and build on the best open-source battery modeling and analysis techniques

### API data access

All of your data's time-series fields, per-cycle metrics, and device metadata properties are available

### Battery analytics libraries

Includes PyBaMM, BEEP, cellpy, impedance.py, and Voltaiq's growing library of powerful, battery-specific analytical tools and functions

### Data science libraries

Includes SciPy, NumPy, SciKit Learn, Pandas, Matplotlib, Plotly, and more



**Voltaiq Analytics Studio unlocks a new level of value from our battery data, by exposing the full dataset to a range of powerful data science and machine learning tools. We can now quickly prototype new metrics and proprietary algorithms for assessing battery health. The IP we have developed with Analytics Studio has enabled us to immediately improve EV battery solutions for our customers.”**

—Aaron Camere,  
Cell Engineering Manager, Proterra

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Voltaiq has built the industry's first Enterprise Battery Intelligence (EBI) software platform, helping its customers optimize battery performance, reliability and financing, while avoiding costly recalls and catastrophic battery fires. Founded in 2021 by veteran battery and software entrepreneurs, Voltaiq's global customer base includes industry leaders in transportation, consumer electronics, energy storage, and the full battery supply chain. For more information, please visit [voltaiq.com](https://voltaiq.com).

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