

[Matrix](#) [Predict](#) [Reports](#) [Design](#) [Summary](#) [Machine Learning Configuration](#)[Access](#)[Retrain](#)[< Back to all views](#)

Intro to Citrination Data View

[Data Summary](#) [Model Report](#)

Models

Learn more about Model Reports and Machine Learning in our Citrination Knowledge Base.

Property Fatigue strength

Property Fatigue strength



Model Settings

Table representation of the machine learning algorithm and hyperparameters from the most recent machine learning training session. The Lolo estimator is Citrine's open source machine-learning library.

Algorithm: Ensemble of non-linear estimators

Number of estimators	128
Minimum samples per leaf	1
Maximum tree depth	30
Uses jackknife method of uncertainty estimation	true
Leaf model	Mean

Number of cross-validation folds: 3

Important Features

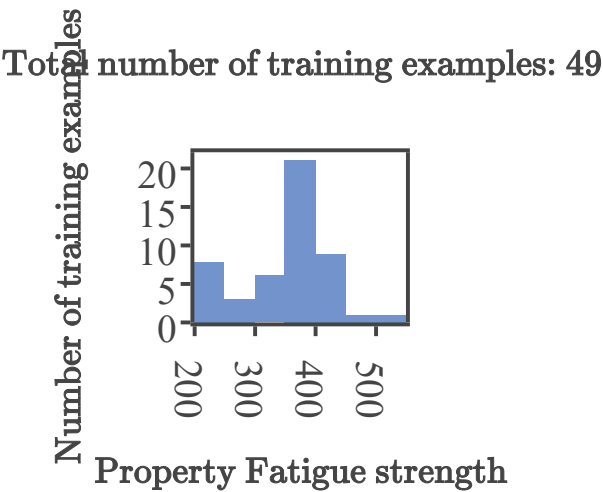
A list of features used to train the model ranked by importance scores. Importance scores sum to 1 and are representative of a given feature's contribution to the model's performance. Learn about the features that are used as inputs to machine learning models on the Citration Platform.

Property Fatigue strength	
mean of Non-dimensional work function for formula	9%
Maximum weight fraction for formula	7%
mean of Trouton's Ratio for formula	6%
mean of Mendeleev number for formula	6%
mean of Elastic Poisson Ratio for formula	5%
mean of Number of unfilled p valence electrons for formula	5%
mean of DFT energy density for formula	5%
Property Normalizing temperature	5%
mean of Non-dimensional heat of fusion for formula	5%
Property Through hardening temperature	4%
mean of Non-dimensional liquid range for formula	4%
mean of Liquid range for formula	4%
mean of Elemental polarizability for formula	3%
mean of Zunger Pseudopotential radius ratio for formula	3%
mean of Elemental crystal structure (space group) for formula	3%
mean of Liquid ratio for formula	3%
mean of Valence electron density for formula	3%
mean of Total number of valence electrons for formula	3%
mean of Number of p valence electrons for formula	3%
Maximum atomic fraction for formula	3%

Property Fatigue strength	
mean of DFT volume ratio for formula	2%
mean of Packing density for formula	2%
mean of Total number of unfilled valence electrons for formula	2%
Minimum weight fraction for formula	2%
mean of Elemental density for formula	1%
mean of Miracle Ratio for formula	1%
mean of Shear Modulus Melting Temp Product for formula	1%
mean of Row in periodic table for formula	1%
mean of Elemental work function for formula	1%
mean of Number of s valence electrons for formula	0%
mean of Elemental magnetic moment for formula	0%
Formula weight for formula	0%
mean of Non-dimensional band gap for formula	0%

Training Data

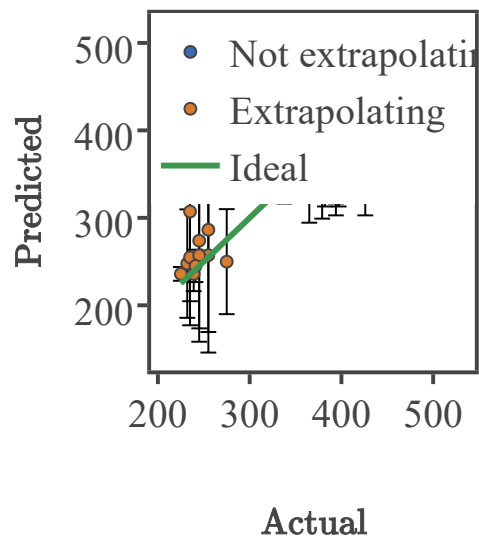
A description of the training data used to train the model. Displayed below are the number of training examples and a distribution of values for the given property.



Performance

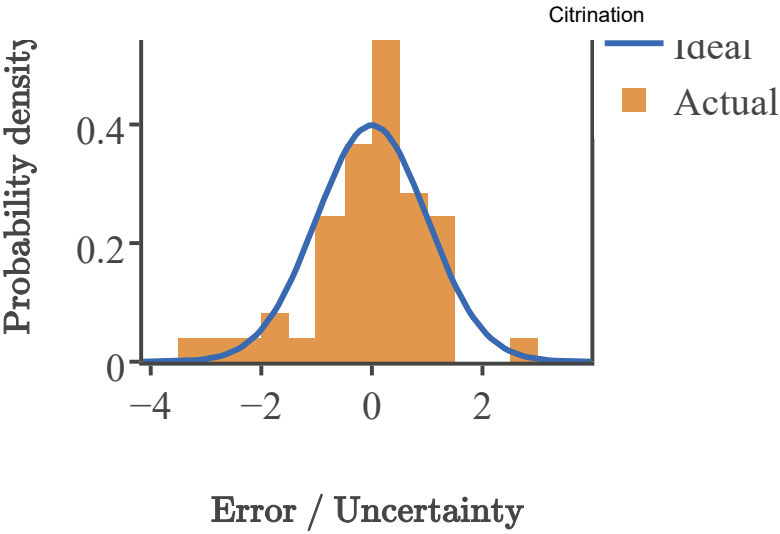
Error Metric	Value
Non-dimensional model error (NDME) (0.0 for a perfect model)	0.564
Standard error in the estimate of NDME (0.0 for a perfect estimate)	0.145
Root mean squared error (RMSE) (0.0 for a perfect model)	39.0
Standard Error in the estimate of RMSE (0.0 for a perfect estimate)	10.0
Uncertainty calibration: fraction of actual values within the prediction error bars (0.68 is perfectly calibrated)	0.735
Uncertainty calibration: root mean square of standardized errors (RMSSE) (1.0 is perfectly calibrated)	1.08

Property Fatigue strength



Distribution of Standard Residuals





© 2021 Citrine Informatics
2629 Broadway, Redwood City, CA 94063

[Report a Bug](#) [Privacy Policy](#)
[Feedback](#) [Terms of](#)
[Join our](#) [Service](#)
[Newsletter](#) [Copyright](#)
[Notice](#)