Causal Inference

* Linear Regression
* Fixed effect
* Instrumental Variable:  **a third variable**
* Regression Discontinuity

Supervised Learning

* KNN
* Linear Regression
* Logistic Regression
* Ridge and LASSO
* SVM
* Naïve Bayes
* Decision Tree
* Random Forest
* Gradient Boosting

Optimization and Loss Function

* Mean Square Error
* Logistic Loss
* Hinge Loss
* Cross Entropy Loss
* Gradient Descent

Practical ML

* Train-Test Splits
* Cross Validation
* Normalization
* Standardization
* Regularization
* Overfitting
* Bias-Variance trade-off
* Interpretability

Internal Validity

Covariance between treatment and outcome reflects a causal relationship

Random Assignment

External Validity

Different people, context

Random Sampling

* + Spillovers, externalities, and interference

Attrition(Much poorer one )

* Bonferroni Adjustments
* Dunn-Sidak

Accuracy : True

Precision: Positive